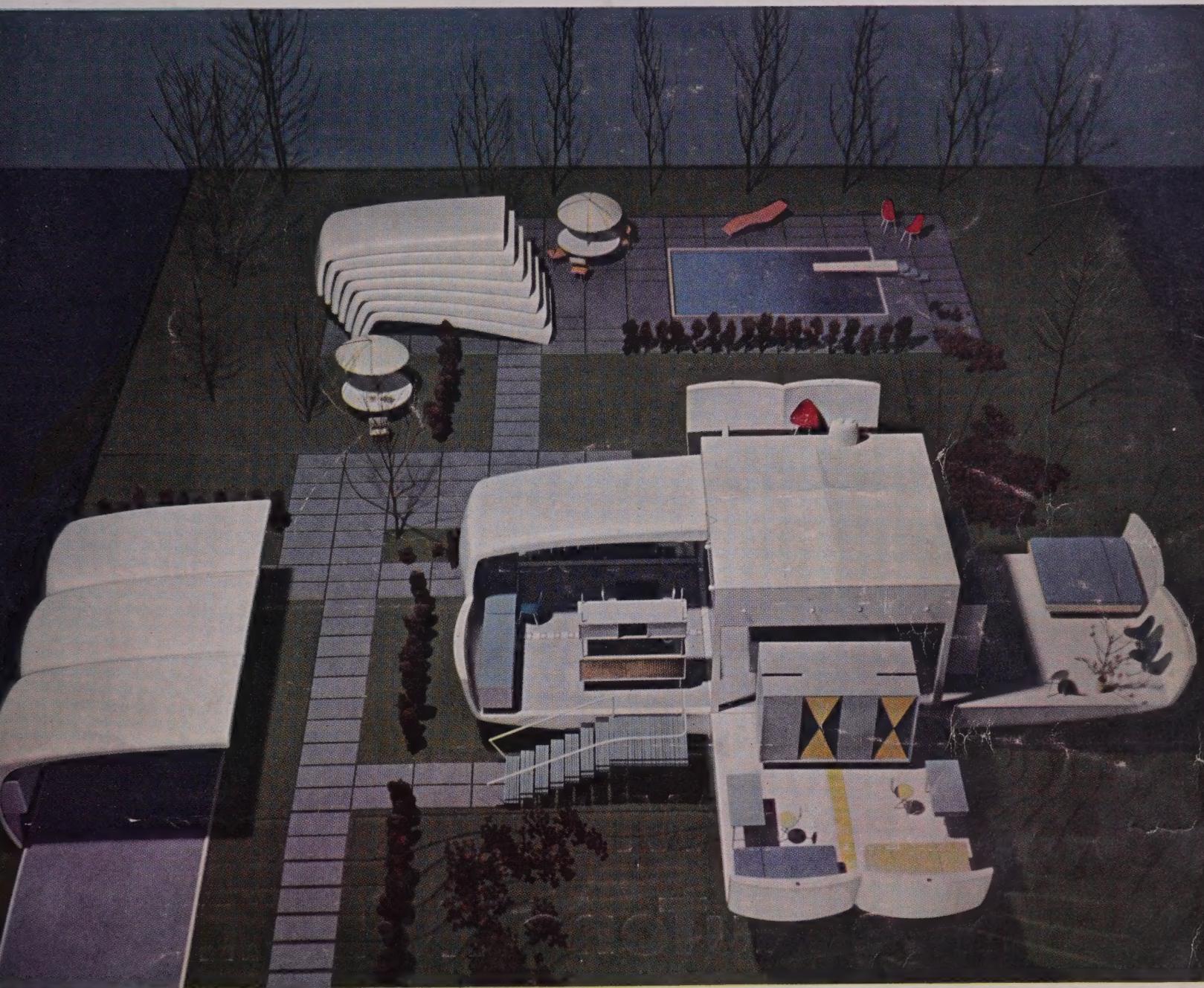


Illinois U. Library House & Home

SEPTEMBER 1956 SIX DOLLARS A YEAR—ONE DOLLAR A COPY



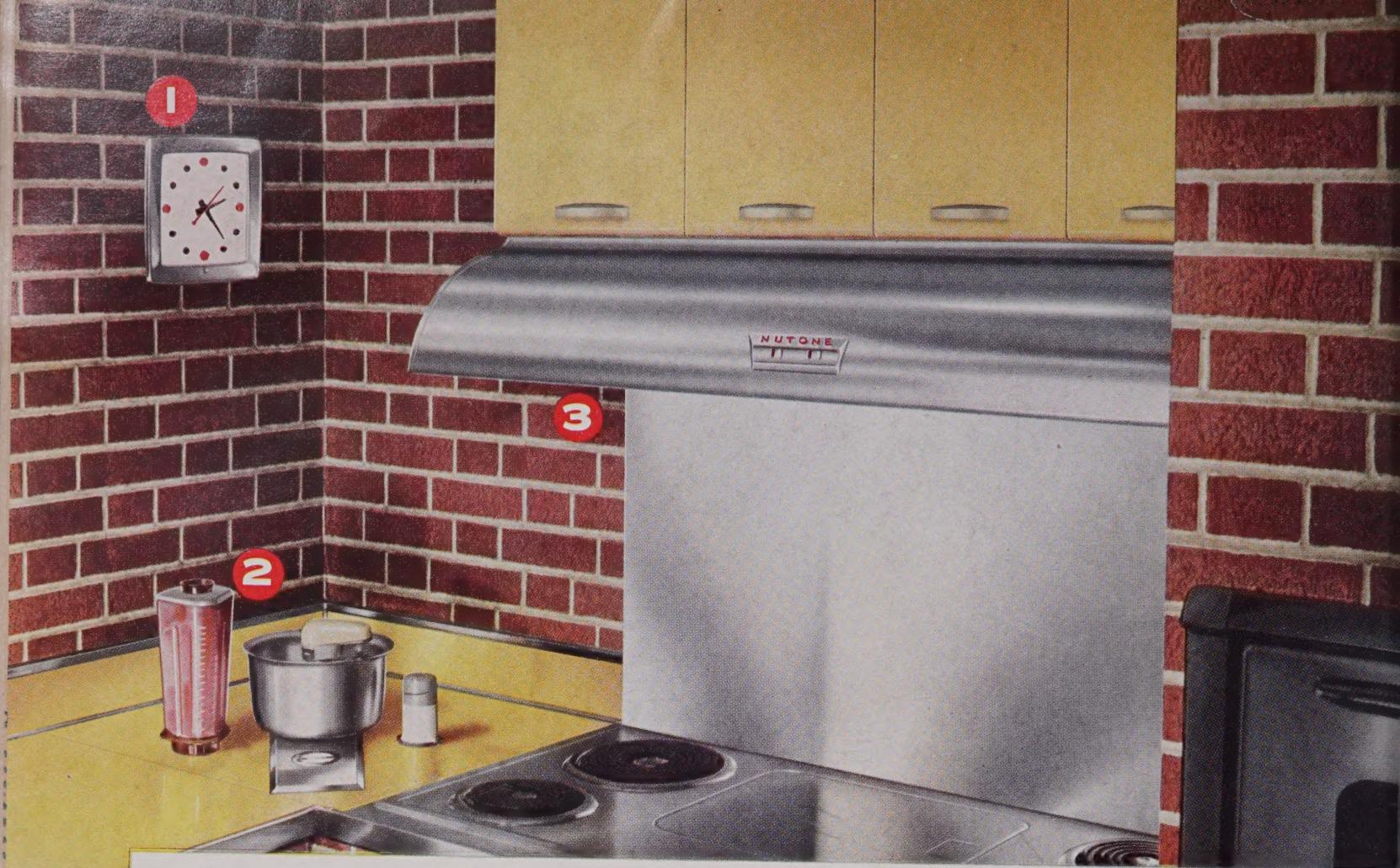
The plastic house: How soon? How good? How expensive? How different? — page 117

■ What the Package Mortgage can do for everybody's sales — page 159

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Frank Lloyd Wright: A case study of 34 basic design ideas — page 136

The 1956 Housing Act: A story the newspapers missed — page 44



These NuTone Features SELL HOMES

Women Will Love these three NuTone IN·BUILTS

YOUR KITCHEN is the "Selling Showcase" for your new homes. Nothing excites any woman's enthusiasm more than a modern attractive kitchen equipped with these NUTONE IN·BUILTS.

Here are three of the most wanted features in new homes today... and YOUR COST IS LOW!

1 Two-note IN·BUILT Door Chime and Clock all in one. Recessed — no clock outlet needed. \$19.95 list. Also three "In-built" and 16 surface mounted chime models.

2 The fabulous NuTone IN·BUILT Food Center, A Mixer, Blender and Sharpener, quickly installed underneath any kitchen counter. ONE motor does everything. \$69.95 list.

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Write for FREE Catalogs MZ-200, FC-210, KP-10

NuTone, Inc. Dept HH-9, Cincinnati 27, Ohio

ROUNDUP

FHA, VA say extra 2% down payment to be dropped

Word was leaked to the builders in August that beginning sometime in September FHA and VA would no longer ask the extra 2% cash required as a credit control measure since July, 1955. With housing starts 18% off from 1955, administration housing chiefs have at last convinced the President's inflation-conscious Council of Economic Advisors (but not the Federal Reserve Board) that the housing industry needed help, not curbs.

Women's Congress produces rash of builder promotions

One unexpected result of the recent Women's Congress on Housing has been a nationwide rash of builder promotions featuring "the house the women wanted." Neil Connor, FHA's chief architect, describes most of these attempts as "just plain ludicrous."

But one of these promotions seems likely to hit the mark. The National Retail Lumber Dealers Assn. has retained top architects to design three homes incorporating the various suggestions and alternatives the Women's Congress offered. These houses will be built for exhibition at NRLDA's Chicago convention, Dec. 10-13.

THIS MONTH'S NEWS

(index to top stories)

Washington outlook: Congress passes a good housing bill as Wolcott outsmarts the Senate and public housers p. 44

Mortgage market: FHA may soon allow 0.5% service charge to lenders p. 59

Housing market: cross country check shows higher priced homes selling best p. 63

Housing studies: Congress OK's 11 studies on housing matters to be made this fall p. 49

Air conditioning: FHA agrees to study up on central cooling as builders complain p. 53

Dallas survey shows that one of every three families wants to buy a home in next two years..p. 66

Materials: studies of materials handling problem started by two lumber groups p. 71

Housing for Aged is being given special consideration by FHA consultant p. 66

People: James W. Follin will quit as urban renewal director with HHFA p. 79

Statistics & indexes:
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Everyone gets something in '56 housing act

The 1956 housing act may go down in history as the act that pleased nearly everyone. Administration spokesmen say they got 90% of what they wanted.

NAHB likes the advance commitment plan for Fanny May. NAREB is happy that existing homes can get the same FHA terms as new. Many mortgage bankers like Fanny May's reduced stock purchase requirement. Lumber dealers got a bigger and better Title I improvement program. (see pp. 44-45)

And the public housers figure 35,000 units for two years is better than nothing at all.

S&L conversions may be involved in Hodge scandal

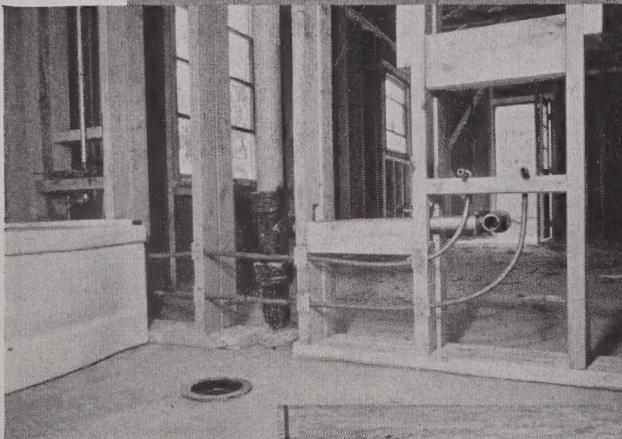
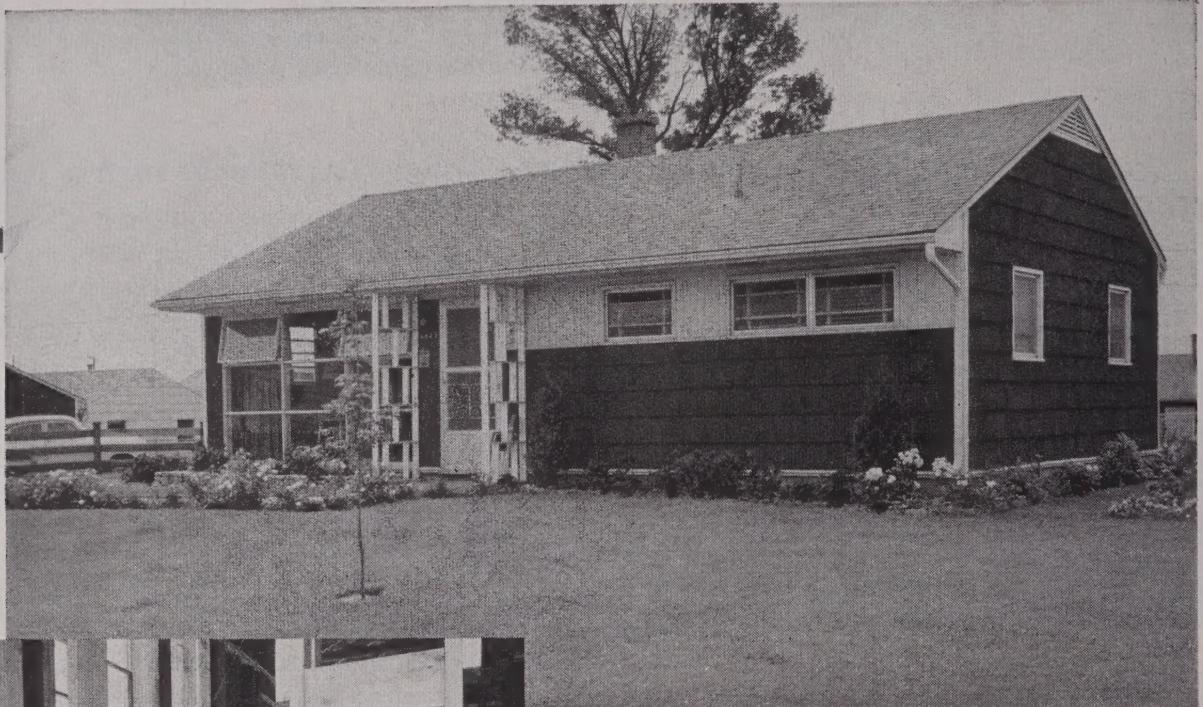
The scandal of Orville Hodge, deposed Illinois auditor, may extend to the S&L industry. Hodge was the driving force behind passage by the Illinois legislature of laws authorizing state stock savings companies and authorizing conversion of mutual savings associations to stock companies. It now seems certain that this phase of Hodge's interest will be included on the agenda of a Senate Banking Subcommittee investigating the financial manipulations which put more than \$1 million of the taxpayers' money in Hodge's pocket.

S&L leaders are watching these developments carefully. If scandal touches the conversion of mutuals to stock companies, it may well prompt the Home Loan Bank Board to crack down drastically on any future conversions. HLBB started to do just that in January, fearing that conversions would result in big capital gains for officers of institutions involved—at the expense of mutual members. Proposed restrictions have been held up as a result of protests from S&L leaders.

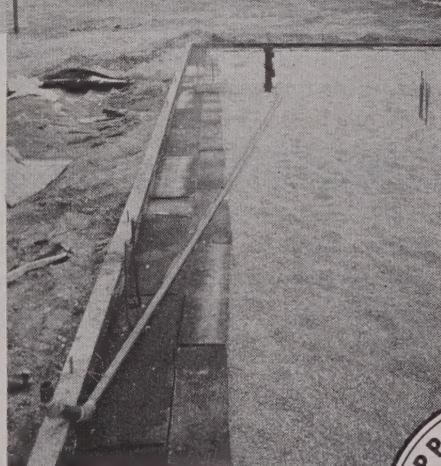
INSIDE-LIGHTS: Top brass in NAHB think the Eisenhower Administration does not realize how important home building is to the economy, so they plan a sales campaign to prove otherwise. A key argument: the current housing slowdown may produce a national housing shortage! . . . FHA may soon agree to include ranges and refrigerators on Title I home improvement loans, but only when they are part of an overall kitchen remodeling . . . As the first study in its new technical testing program FHA may soon commission BRAB to report on sewers and streets . . . Home Loan Bank Board Chairman Walter McAllister may be asked to stay on the job until after election. He resigned as of July 1, but continues in office pending naming of a successor.

NEWS continued on p. 44

"WE SAVED \$50



(Above) Typical bathroom hook-up with Revere Copper Water Tube. Note how the contractor, CLAY-POOL PLUMBING & HEATING COMPANY, used steel plates where tube crosses the two-by-fours. This permits tube to be placed in notched studs with ease and without sacrificing protection of the tube. Also, consider the time and number of joints and fittings saved by bending the soft copper tube in concealed locations like the one shown.



(Above) Here you see a 1½" Revere Copper Water Tube, Type "L" drainage line running from the kitchen sink before concrete slab was poured. Note how builder took advantage of the single, long, light, straight lengths of Revere Copper Water Tube . . . no extra joints, caulking or thread cutting here. In addition the builder had no fear of copper rusting when buried in the concrete slab. Revere Copper Water Tube also was used for service lines and internal water distribution.

Shown directly above is one of the homes erected by GRANT-HOLLADAY in Newcom Knolls, a suburb of Dayton, Ohio. These homes are prefabs with an option of 4 bedrooms or 3 bedrooms and a dining room. Lots average 60' x 125'. Full price is \$10,750. This house is typical of the more than 1,100 which GRANT-HOLLADAY plans on erecting in Canton, Youngstown and Piqua, Ohio.

When you consider that GRANT-HOLLADAY saves \$50.00 per home by using Revere Copper Water Tube and then multiply this saving by the 1,700 homes they have completed and plan to erect, you have a saving of \$85,000! And that, Mr. Architect, Mr. Builder and Mr. Contractor, "ain't hay!"

If that kind of money can be saved in homes within this price range, think of the savings that can be realized when you get into the higher price brackets. That's why it will pay you to plan on copper in all your future homes . . . for underground service lines, hot and cold water lines, radiant panel heating, air conditioning, drainage, waste and vent lines. See your Revere Distributor. And if there is anything involving the installation of Revere Copper Water Tube that's bothering you, he'll be glad to put you in touch with Revere's Technical Advisory Service.



Revere Copper and Brass Incorporated
Founded by Paul Revere in 1801
230 Park Avenue, New York 17, N. Y.

Mills: Baltimore, Md.; Brooklyn, N. Y.; Chicago, Clinton and Joliet, Ill.; Detroit, Mich.; Los Angeles and Riverside, Calif.; New Bedford, Mass.; Newport, Ark.; Rome, N. Y.
Sales Offices in Principal Cities, Distributors Everywhere.

PER HOUSE by using REVERE COPPER WATER TUBE in our plumbing and drainage lines"



"To enable us to construct these houses in Newcom North and Newcom Park and sell them at the low sale price of \$10,750 and still make a profit, it has been necessary to incorporate any and all time-saving devices available. With this pre-cut and pre-assembled type of construction, the use of copper with its ease and speed of installation was dictated. It soon became apparent that the \$50.00 saving per house effected through the use of Revere Copper Water Tube, coupled with the added sales appeal, made copper the logical choice."

Says, Wallace F. Holladay, President
GRANT-HOLLADAY CORPORATION
Dayton, Ohio



"This business of contractors saying that copper is expensive to install is being disproved every day. Our experience has proved just the opposite. Copper water tube not only does *not* cost more to install than rustable materials, it actually costs less . . . in the case of these homes that GRANT-HOLLADAY built it was \$50.00 less, *per home!* The reasons are obvious: solder fittings, fewer fittings, long lengths, ease of handling and bending, and the prefabrication of certain assemblies in the shop."

Says, Charles Claypool, President
CLAYPOOL PLUMBING & HEATING COMPANY
Kettering, Ohio



"We have furnished CLAYPOOL PLUMBING & HEATING COMPANY with approximately 160,000 pounds of Revere Copper Water Tube for the 1,700 homes that GRANT-HOLLADAY is building. Handling Revere Copper Water Tube is good for us, not only from a prestige standpoint, as contractors and builders know it is of the highest quality, but I've found that when Revere says they'll deliver on a certain date, they deliver . . . and that's mighty important to a distributor."

Says, R. J. Makarius, President
ACME PLUMBING SUPPLY COMPANY
Dayton, Ohio

LEGISLATIVE REPORT:

The '56 Housing Act—it has something for nearly everyone in housing industry

While newspapers were preoccupied with public housing more important things were being done for private housing

Most important provisions of the 1956 housing act got hardly a mention in the newspapers. Their editors were so busy watching the side show over public housing (3% of the market) that they missed what was being done for the other 97%.

Here are the important new provisions:

Easy terms for old houses

From now on year old houses can get the same FHA mortgage terms as new. That means at least four old houses out of five (i.e., all old houses valued at \$9,000 or less) can be sold FHA for only 5% cash (plus the temporary 2% extra).

Purpose of this change is to loosen up the house market and make it easy for home owners to sell their old homes to buy better ones. Chief promoter of the change is NAREB. The Home Builders are not too happy to see old houses selling better than new this year, and they are not yet convinced that the best market for new houses is the second-time buyer, who must sell his old home before he can buy a new one.

Before the housing act of 1954, FHA required twice as much cash (\$800) to buy a used house for \$4,000 as to buy a new house for \$8,000 (\$400). The 1954 law requires the same cash

for a used house at \$4,000 as for a new one at \$8,000. The 1956 law finally puts both on the same terms.

Now the big question is whether FHA appraisers will figure existing house appraisals high enough to make the program work. If they do, most old houses could be 85% as good as cash in the bank to owners who want to trade up for a better place to live. Incidentally, the easier terms for old houses automatically cut 18% off the cash a builder or realtor needs to finance a low priced trade-in through FHA. (He can borrow 85% of 95% instead of 85% of 90%.)

Research program authorized

At last the home building industry will get a few more of the market statistics it needs. HHFA is authorized to spend \$500,000 this fiscal year and \$1,000,000 in each of the next two years to get better facts on the housing inventory, the housing requirements for low and middle income families, the functioning of the mortgage market, and almost anything else it deems necessary.

Heretofore Washington has spent less money to get market facts for America's biggest industry than it spends for the peanut industry. (For this, NAHB is as much to blame as anyone. It fought HHFA's old research program, helped get it killed in 1954. Reason: it didn't want

HHFA investigating its markets.)

The research authorization carries no appropriation, but HHFA has gone to work planning how to use the money. Most of it will be farmed out to the Census Bureau, BLS, the Bureau of Standards, and college research groups.

90% mortgages for rental housing

To spur private construction of apartments—lagging since Sec. 608 lapsed in 1950—the new law lifts the FHA mortgage ceiling on Sec. 207 rental housing to 90%—the same as in Sec. 608—but these safeguards are written in to make “windfall profits” impossible:

1. Mortgages will be based on FHA valuation instead of on FHA estimates of what it would cost an average builder to replace the project, as they were under Sec. 608. Remembering the 608 uproar, FHA appraisers are hardly likely

to be overgenerous now in their valuations.

2. Builders must certify their costs in detail; if they are less than the valuation, the mortgage must be reduced in proportion. (Costs include construction fees and construction profit.)

Public housing tied to workable program

The prerequisite of a workable program for prevention of slums was restored to the public housing program as Congress authorized 35,000 units a year for two years, just what the administration asked.

Congress also allows PHA to carry over any of the 45,000 units authorized for fiscal 1956 but not under contract by the July 31 deadline. (Only 578 units.)

PHA officials believe the workable program requirement will most affect small communities—particularly in the South—which have never both-

ered with workable programs and probably won't.

A clause in the old housing act limiting the number of units put under construction in one year to 35,000 is eliminated. Although PHA has not come close to this limit in the past, it currently has 100,000 units from past programs under contract, but not yet built.

Here's how the housing act got through Congress

This year, House conservatives—masterminded by old Fox Jesse Wolcott—finally outsmarted the public housers and the Senate.

Result: the Housing Act of 1956, which could have been one of the worst ever, may well be one of the best. Good points in the several bills considered in Congress were saved. But schemes to dig the government deeper into housing were kicked out.

This year the public housers were over the barrel. Unless Congress passed a housing act before adjourning, public housing would run out July 31.

In other years it was just the other way around: the public housers had the home building industry over the barrel. In other years, without a new housing act, FHA would have run out of its authorization.

But this year, with housing starts down and the big shift to conventional financing, FHA still had \$2 billion, enough to keep on insuring loans until next spring.

Wolcott saw his chance

So no one in the industry cared too much whether a housing act passed or not (except lumber dealers, who were hot for Title I extension). Almost everyone in the industry thought no bill would be better than the one the Senate had passed or one bill the House banking committee had approved.

In mid June it looked as if there might be no housing act at all. The House wouldn't even consider the Senate bill, loaded with handout housing; and the Rains bill, backed by the House banking committee, was bottled up in the rules committee by an anti-public housing majority.

As adjournment loomed nearer and nearer public housers were wild, and Jesse Wolcott saw his chance. Two days before adjournment he sold housing leaders from both parties a plan which would not only break the deadlock but produce a much better law. Here is how it worked:

With Wolcott calling the play, the House rules committee agreed to vote out the Rains bill under a gag rule allowing but one amendment from the floor—an amendment offering a complete substitute prepared under Wolcott's direction.

The House promptly passed the substitute by a voice vote and sent it to the Senate with an ultimatum—this bill or nothing. Wolcott and other House leaders were determined there would be no conference at which senators could put back thousands of units of public housing as they had in other years.

Public housing settled

That made it the Senate's turn to try to be smart. With many members angrily protesting they would not take such dictation, the Senate swallowed the House public housing section, but sent the bill back to the House with all the rest of the original Senate section intact.

That settled the public housing issue, for once this section had been passed in identical form by both houses it could not be changed in conference.

But Jesse Wolcott refused to take the bait,



H&H staff

OLD FOX JESSE WOLCOTT

stood firm for the bill the House had passed, and refused to let the bill go to formal conference.

Not until the very last day was the deadlock broken, when "the men who would have been conferees" got together and worked out a compromise which followed the Wolcott pattern except for these 2 points:

1. The Senate did not like the House clause making it mandatory for the Defense Dept. to buy all old Wherry military housing (272 projects costing \$690,945,270 when new). The House formula for purchase (estimated replacement cost adjusted to current cost level minus depreciation) was a sure-fire formula to guarantee windfall profits, Sen. John Sparkman (D, Ala.) protested. (The Senate later won its point. See housing bill story.)

2. The Senate objected to a raise in salary for HHFA Counsel General A. Oakley Hunter. The House bill would have upped his pay to \$20,000 annually, the same raise given to heads of all HHFA constituent agencies in another bill. Senators noted that Hunter had helped write the House bill. (The Senate won this point, too.)

30 minutes to spare

When Wolcott approved the compromise, a formal conference was authorized; the conferees ratified their previous agreement and both houses passed the bill 30 minutes before adjournment.

The bill was Congressman Wolcott's last big contribution to housing progress. Retiring after 26 years' service, this was his final hour in Congress.

These parts of the original Senate and Rains bills died along the way:

- The Senate public housing program of 135,000 units a year until the balance of 810,000 authorized in 1949 are built, plus 15,000 units for the aged.
- The Rains public housing program of 50,000 units a year for three years plus 10,000 units for the aged. (The compromise is 35,000 a year for two years.)
- The Senate's proposed Sec. 229 to let FHA sell low-cost housing to elderly persons on 100% 40-year mortgages.
- The House proposal to earmark \$500 million in National Service Life Insurance to buy VA mortgages at par in high discount areas.

Housing act liberalizes Fanny May; extends Title I and military housing

1. If worst comes to worst builders can now get advance commitments from Fanny May at 92.

2. The stock purchase penalty for selling to Fanny May is cut from 3% to 2%.

3. Fanny May must pay 99 instead of 98 to support the market for "special assistance mortgages" (co-ops, military housing, housing for disaster areas, Guam and Hawaii).

The FNMA advance commitment a) is good for one year, b) requires a nonrefundable cash payment of 1% (i.e., builders must pay \$100 for each \$10,000 stand-by), c) must be pegged at a low price to make sure builders won't use it unless they have to. FNMA is starting the peg at 92.

FNMA expects its advance commitments will be used mostly by builders who need it to get construction financing.

The new law continues the FNMA nine months repurchase privilege (i.e., sellers to FNMA have nine months to buy their mortgages back at the same price if the market goes up).

The stiff 3% stock purchase price was written into the 1954 housing act to force approved lenders to buy FNMA off the government's hands as fast as possible. FNMA expects the 33% cut in its stock purchase penalty will increase its sales in fiscal 1957 from \$450 million to \$550 million.

Congress also modified the wording which controls Fannie May's mortgage purchase prices. They must now be "within range of market prices," instead of "at the market price." (Actually FNMA has been staying in range rather than at market for some time. If it hadn't, it would have had to drop its prices long ago.)

Title I broadened and extended

FHA's Title I home improvement program is extended for three years. Maximum loan limit is increased from \$2,500 to \$3,500 and repayment period extended from three to five years.

On multifamily structures the old \$10,000 loan limit is raised to \$15,000, provided the average loan per unit does not exceed \$2,500.

The discount rate on loans is fixed at 5% for any amount up to \$2,500. It is fixed at 4% for all over \$2,500.

50,000 more military housing units authorized

Capehart housing is continued to June 30, 1958. Enough new insurance authority is provided to finance 50,000 more units. (Only a few of the 100,000 authorized last year are actually under construction.) The Defense Dept. is ordered to buy any old Wherry housing before it builds any Capehart housing in the same place.

Unit cost on Capehart housing is increased from \$13,500 to \$16,500 with the price to include range, refrigerator, shades, screen and fixtures. All units must be modular, to give prefabricators a chance to bid the projects.

If FHA disagrees with the Defense Dept. on the need for Capehart units in any location, a report on the project must be made to the Senate and House Banking committees. (The military public works bill gives Congress even more review authority. The Defense Dept. must give the Senate and House Armed Services

committees six months notice of any new Capehart projects it is planning.)

Right of local communities to tax Wherry housing is confirmed. (June News.) Where localities do tax, however, they must make reductions for payments made in lieu of taxes and for cost of streets, utilities and services provided by the military. Capehart projects are expressly exempted from local taxation, however.

Wherry housing purchased will be paid for on the basis of replacement cost less improvements made by the military and less depreciation.

Public housing for aged rejected

Congress turned thumbs down on any special public housing for the aged like the 15,000 extra units asked by the Senate. Instead it voted them a dubious priority on existing public housing units and special help through two new FHA programs.

Persons 60 or over can now buy under Sec. 203 with another party making the down payment. (Others can also co-sign the mortgage.)

The Sec. 207 program is liberalized insofar as elderly persons are concerned by allowing a

90% mortgage based on estimated replacement cost of a 207 multifamily rental housing project. All other 207 mortgages are based on value, which invariably results in lower appraisals.

Expenses of slum DP's to be paid

The federal government will pay "reasonable and necessary" expenses of families and businesses forced to move from a Title I slum area—not to exceed \$100 a family or \$2,000 for a business.

Funds available to any one state for slum clearance work can be increased to \$100 million. The old limit: \$70 million. Urban renewal

assistance can be given to any community in a major disaster area without regard to usual requirements.

continued on p. 49

You can please every buyer with FULL LINE OF GAS, ELECTRIC

... all designed to fit
standard cabinets
and cut your costs!

You couldn't ask for better traffic-builders and greater sales appeal than you get with Tappan. The leader in quality range-making for 75 years, Tappan triumphs again with the revolutionary new electronic range, the latest in a long list of "firsts." Add this to a tremendous variety of Tappan gas and electric built-in ovens and surface units—or use in all kinds of flexible combinations—and you can please every customer with units for every kitchen plan and price.

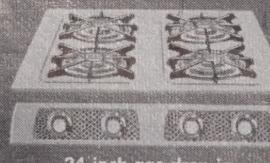
Show them Tappan's new ideas, new features, new styling—all in the world's only complete choice of gas, electric and electronic built-in ranges!



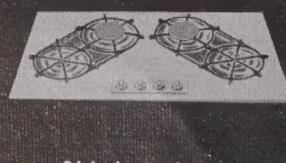
**Show 'em the Miracle Range
they're raving about everywhere—
THE AMAZING TAPPAN ELECTRONIC!**

They've read about it, talked about it—now women everywhere want to use this sensational Tappan cold-oven range that cuts cooking time up to 90%! You can cash in on its unbelievable speed, new coolness for kitchens, remarkable new cleanliness. It's automatic, safe, economical . . . uses conventional wiring . . . operates on 220-volt current, three-wire circuit.

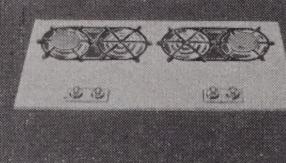
Fit every buyer's building
or remodeling plans with
choice of 3 gas and
4 electric surface units!



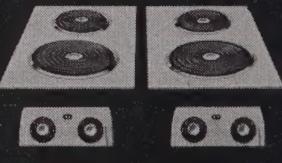
24-inch gas drop-in



36-inch gas drop-in



42-inch gas drop-in



24-inch electric drop-in

NOTHING COOKS LIKE A TAPPAN...

Congress approves 11 fall studies on housing matters

Congress wants a lot more information on problems affecting housing. Before adjourning it called for 11 fact-gathering studies this fall.

The Senate Banking committee told its staff to look into the relationship between income and housing. Is there a need for the federally supported middle income housing program urged by Senator Lehman? This same committee also told FHA to review the package mortgage setup (see pp. 159-165).

The Senate Banking committee named a special subcommittee to review the nation's whole banking and credit structure. The role of the Home Loan Bank Board is on the agenda, though S&L leaders wish it weren't, fearing the Federal Reserve may want to slow down S&L growth.

The Housing subcommittee wants to know more about FHA's management and sale of foreclosed property. More important, it wants to know more about the high cost of land for urban renewal and what, if anything, can be done about it.

The Senate Housing subcommittee wants to know how the new Federal road building program can be correlated with urban renewal, and how displaced families will be housed. The Senate and House Armed Services committee and the Senate Housing committee were told to keep a close eye on the military housing program—particularly any purchases of Wherry housing.

The House Veterans' Affairs committee is checking up on complaints that VA inspection is lax, that many VA homes fall in.

HHFA's new Elderly Persons Housing Advisory Committee was told to report on how much and what kind of housing is needed for the aged.

The Housing subcommittee is planning a Round Table discussion on how to get more pension and retirement funds into the mortgage market.

Both the Senate and House Banking committees have told their staffs to take another look at the proposed separation of the Federal Savings & Loan Insurance Corp. and the Home Loan Bank Board.

LEGISLATIVE BRIEFS

HHFA brass get salary hike

All top brass in HHFA got a pay boost from Congress.

The administrative pay raise bill raised Administrator Cole's annual salary from \$17,500 to \$21,000. His deputy, Frank J. Meistrell, will now draw \$20,500. His old salary: \$15,000.

Salaries of heads of the constituent agencies—FHA, PHA, Fanny May and the Urban Renewal and Community Facilities Administrations—were increased from \$15,000 to \$20,000. HHFA Counsel Oakley Hunter got no raise. (See p. 45)

Realty trust tax bill vetoed

The President vetoed a bill to give real estate trusts the same tax treatment as security investment trusts (i.e., tax the beneficiaries but not both the trust and its beneficiaries).

His reason: security investment trusts get most of their income from corporations already taxed 52% of their profits. But no such income taxes have previously been paid on the earnings of real estate trusts.

GI housing program extended

World War 2 veterans have another 23 months to use their GI housing entitlement.

In its closing hours Congress extended the VA housing program from July 25, 1957, to July 25, 1958. Deals under contract by the deadline will have another year for closing.

More provisions of the '56 housing act: Sec. 220 sweetened; co-op rules eased

continued from p. 45

Congress has put a thick sugar coating on the Sec. 220 program (multi family housing in urban renewal areas) in an effort to get more builders participation. Builders are allowed now to include a 10% profit in cost certification.

With a 90% loan to replacement cost ratio for his mortgage, the builder of a 220 project will actually put none of his own money into it. His only equity in the buildings will be his profit.

The 220 program, started in 1954, has never quite gotten off the ground—mainly because FHA

limited profits to 7% or less. The FHA director can still certify a profit of less than 10% if it appears 10% would be unreasonably large.

The new provision also allows property owners with no lien against their buildings to get a 100% loan based on the cost of remodeling and improving their property.

Terms liberalized for replacement housing

Most liberal part of the housing act is aimed at stimulating more builders into the Sec. 221 program to provide low-cost housing for families displaced by urban renewal programs. A 100% 40-year mortgage plan is set up.

All that the home buyer must put down on a 221 home is \$200 to cover closing costs. Under the old law a 5% down payment was required on a 30-year mortgage.

Maximum mortgage amount is increased from

\$7,600 to \$9,000 and from \$8,600 to \$10,000 in high cost areas.

FHA has already instructed its regional directors to encourage and promote 221.

85% commitments for co-operative housing

Belated recognition is given the builders' long-time complaint that the building stage of a co-operative must precede rather than follow the actual forming of the co-operative. A builder-sponsor can now get a commitment on an 85% mortgage on a replacement cost basis.

The sponsor is required to certify his intent to sell the building as a co-operative. When sale is completed the mortgage can be adjusted to the 90% loan-to-value basis allowed by law. If the percentage of veterans in the project is 50% or more a 95% mortgage can be arranged. (The

old law required 65% veteran buyers for the 95% mortgage.)

To prevent abuse of the advance commitment feature, a sponsor would lose the right to get another such commitment if he does not sell the building as a co-operative.

Miscellaneous parts of the act

The administration move to get an increase in the interest rate on loans in the college dormitory program failed. The limit of the program was increased from \$500 million to \$750 million but the interest rate remained at 2 1/8%. The administration had asked for a new formula and 3.25%. Other provisions of the law:

- Cost certification provision on rental housing is eased so that once the FHA commissioner has approved a builder's showing, the certification is final and cannot be questioned again by FHA except for fraud.
- Forty-three defense housing projects are transferred from PHA to the Defense Dept.
- VA direct loan program is extended to July

25, 1958 to match the extension of the VA program for World War II veterans.

► FHA's insuring authority is increased by \$3 billion, enough to carry it to the fall of 1957.

► Farm housing act amended to allow \$450 million for farm housing loans, \$10 million for contributions and \$50 million for grants during next five fiscal years.

Congress approves flood insurance bill; HHFA setting up agency to handle plan

Flood insurance finally got through Congress.

HHFA was ordered to set up a new agency to handle it. Still to be worked out: who will sell the insurance for HHFA on the local level? Still to be figured out: what it will cost the taxpayers?

Property owners buying policies will pay 60% of the premium, the government 40%. After 1959—long enough to give all states a chance to pass enabling legislation—states will be expected to pay half the 40%. If any state refuses to participate, its residents will not be able to buy the insurance.

Total liability limit on the program was set at \$5 billion, with a \$250,000 limit on any one

business property and \$10,000 on any one residence. A government housing witness told Congress rates on a \$10,000 house would range from \$69 to \$372.

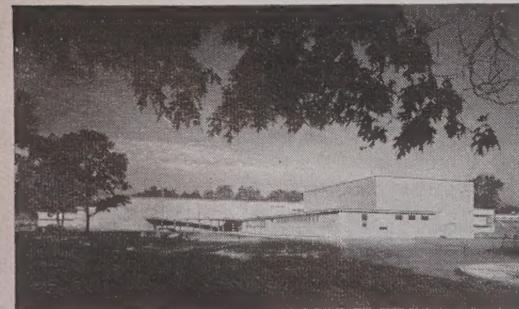
Congress also approved a \$2.5 billion loan program for flood victims.

Although Congress hoped private insurance companies would participate in the program—with the US reinsuring—there is no sign they are any more interested now than they were before. They contend flood risk is uninsurable, because almost no one will buy it unless his property is located in an area subject to occasional flooding.

NEWS continued on p. 53



Thomas Jefferson School, Fairlawn, New Jersey, is further proof that schools get better lighting with latex paints.



For better distribution of light— **LATEX PAINTS**

In schools, as in homes, latex paints reduce eyestrain, improve appearance

There's a wide range of latex paint colors. But no matter which color you select, you are sure of this: The uniform, velvety surface of latex painted walls and ceilings helps you attain even distribution of light. That's why easier reading and less eyestrain are among the many benefits of latex paints.

Schools find latex paints save time
These modern paints are easily applied—minimum crews do maximum painting. Latex paints dry to the touch in twenty minutes—rooms can be given two coats the same day. And they provide significant economies sought after in school-building programs.

Latex paints cut maintenance costs
You'll like the protection that provides tough, continuous binding with color pigments gripped in velvety finish. Most stains are removed with a wet sponge. But latex paints can take the hardest scrubbing—the color pigments are imbedded in film. Surfaces are sealed to wear longer, more beautifully, more economically.

New York suburb rationing building permits for homes

A new scheme to keep out builders comes from suburban New Castle, N. Y.

A jam-packed town meeting forced the town board to vote a zoning amendment to ration building permits "wherever schools are crowded" and allow no increase over the 1951-55 average. Every civic organization backed the restriction. The popular demand was overwhelming.

As a result, only 100 permits a year will be issued in a fast-growing area of 23 sq. mi. right in the path of New York's northward growth 20 miles from the city line. First priority on the limited permits will go to lot owners building for themselves. Last priority will go to merchant builders, who already have plot plans filed for 280 houses, for many of which they have installed roads and sewers.

The meeting voted down an amendment which would allow a merchant builder facing bankruptcy as a result of the restriction to appeal for a special dispensation to let him stay in business.

Westchester County home builders and land owners promptly subscribed \$21,000 to fight the New Castle restrictions in court.

Explains builders' lawyer Albert E. Marten: "The crowding of schools in New Castle is no different from that in other parts of the country. The patient can't be cured by cutting off his left leg, as New Castle is trying to do. What the town should do is lure some big office building developments and supermarkets to town as other places have done to get additional tax revenue."

Alexander Feinberg, attorney who represented New Jersey builders in an excessive building permit fee case (June, News), told *HOUSE & HOME* he thinks the New Castle ordinance is illegal. "It's a restraint in the use of an individual's and a corporation's property. There is nothing in the law to support such an ordinance," said Feinberg.

How many potential home buyers live in public units?

Are there many prospective home buyers in public housing projects? Public housing advocates have used the argument that it helps prepare families for home ownership. The Portland (Ore.) Housing Authority questioned 473 families moving out of public housing units in the past year in an effort to find an answer. Results:

Only 61 families (13%) definitely planned to buy homes—all in Portland area. Of all others who planned to remain in the area 239 (50%) were going to rent. None of the 173 families (36%) leaving the area said they would buy homes; 100 (21%) said they would rent wherever they went. And 73 families (16%) were undecided about their future housing.

Apathetic El Paso voters turn down public housing

Public apathy about public housing was again demonstrated—this time in El Paso, Tex.

Voters there were asked to decide whether the city should contract with the Public Housing Authority for 300 new low-rent units. NAREB and NAHB leaders opposed the program; so did El Paso's two daily papers. Most of the El Paso clergy, the mayor and city council supported it.

Despite the well publicized debate only 14,698 of the city's 42,000 voters bothered to vote. The results: 7,769 against and 6,929 for.

Key point in the opposition argument was the city's vacancy rate—very high and still going up after years of high rents and a low vacancy rate.

AIR CONDITIONING:

Mason admits to builders that FHA lacks facts about central home cooling

FHA does not know enough about air conditioning.

So stated Commissioner Norman P. Mason, himself, July 31 at an all-day seminar in the Housing Center. But added Mason: "Somebody isn't giving us the facts. I just don't think the air conditioning industry has done a good job of educating us on air conditioning."

Mason had been put on the spot by both builders and air conditioning manufacturers, both of whom blame FHA for keeping central cooling out of many thousands of new homes.

The attack was led by former NAHB President Dick Hughes, No. 1 evangelist of central cooling and vice chairman of the Housing Center.

He had queried 130 builders and found that of 56 who were putting air conditioning in their homes a year ago, only two are doing so now. Theoretically the seminar was held to find out why these 54 builders (plus many more) had given up. But in fact everyone thought he already knew why. The reasons:

1. FHA allows inadequate credit in its appraisal. As a result much of the cost of air conditioning must be added to the down payment.
2. FHA sets excessive minimum income requirements for families buying air conditioned homes. (Hughes complained that buyers who want air conditioning must have monthly incomes of \$75 to \$200 a month more than buyers of the same home without central cooling, though the best estimate of the average operating cost is \$100 a year.)
3. FHA has blocked changes in house design intended to cut the operation cost. (One Texas builder tried to reduce window sizes in a \$19,500 fully cooled home, only to have the local FHA director write: "Our regulations do not permit us to substitute mechanically propelled air-conditioning ventilation for natural ventilation."

Mason listened to the builders and manufacturers complain and then agreed that perhaps changes are in order.

He further agreed to give official advisory group status to a committee of builders and manufacturers named to help and counsel FHA's technical staff

One question remained unanswered, as the seminar ended: Why did FHA ignore stacks of published research on air conditioning costs until prodded into action by the Hughes seminar?

50% increase seen in sale of central cooling units

Sales of central air conditioning units appear headed for a 50% gain over 1955.

A *HOUSE & HOME* survey of ten top manufacturers showed that sales uniformly are up by half. All predicted a total industry sales record for the year of at least 185,000 central units compared to last year's 125,000 units.

The survey also brought out that some manufacturers are obviously concentrating on tie-ups with builders for new home installations while others are selling through dealers, primarily for existing homes.

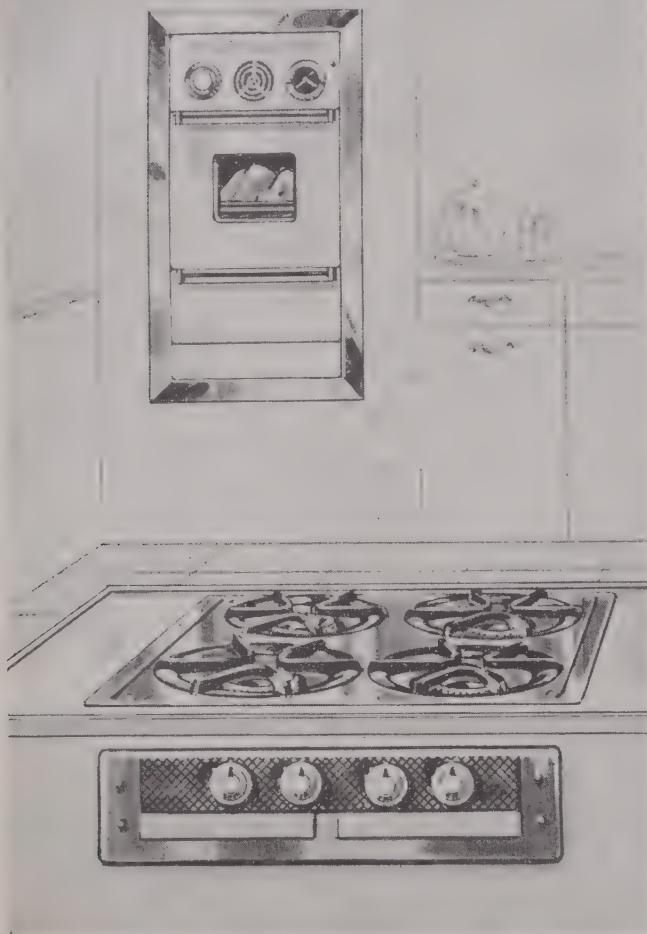
Chrysler's Airtemp, Typhoon and Westinghouse, for example, estimated that about 70% of their production of central units goes into new homes. Frigidaire, Vanado and Worthington, however, reported that most of their installations are in existing homes. Coleman and Lennox reported sales split evenly between new and existing homes. Other manufacturers declined to give breakdowns.

Most manufacturers agreed that their industry needs more and better promotion.

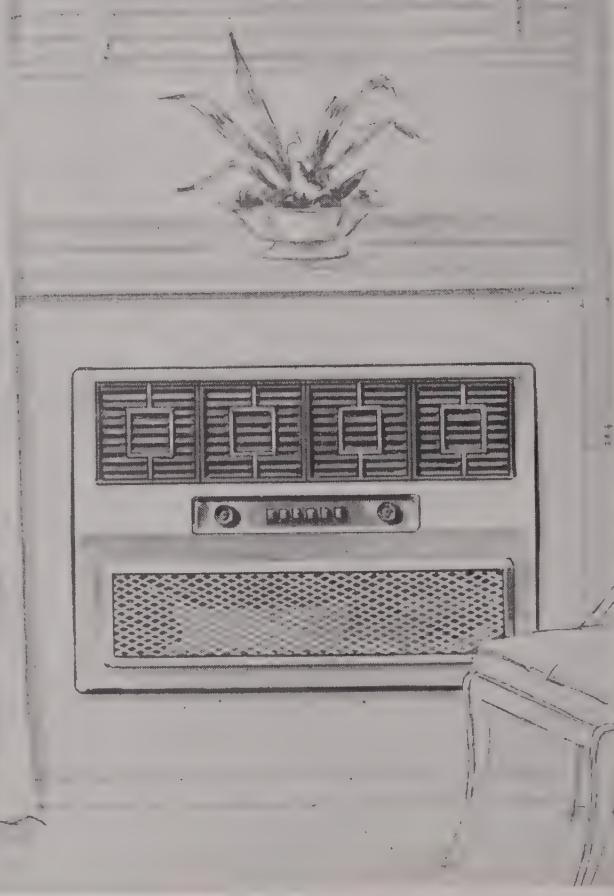
NEWS continued on p. 59

Welbilt-In

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Lowest cost air conditioning. Requires no duct work or extra space. Complete unit installs directly in wall. Only 16" deep.

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Large increase in savings reported in first half of '56

Savings are piling up faster. Soon they may make borrowing easier.

Second quarter savings hit a \$20.5 billion annual rate, says the Commerce Dept.—up from \$16.5 billion for 1955. First quarter savings, says SEC, hit \$5 billion—biggest quarterly total since mid-1952—up 50% over the preceding quarter, up 200% over the winter before.

Liquid savings rose \$4.5 billion net, including \$3.8 billion invested in securities—\$800 million in corporates, \$600 million in tax exempts, \$2.4 billion in Treasuries (most since early 1947). S & L savings increased \$1.1 billion; bank, time and savings deposits rose \$1.3 billion. These liquid savings increases totaling \$6.2 billion were offset by a drop of \$900 million in demand deposits and \$800 million in currency holdings.

Nonliquid savings showed a net rise of \$500 million.

MORTGAGE BRIEFS

FHA discounts level off

Prices of FHA Sec. 203 mortgages for immediate delivery on the secondary market leveled off in July.

Average price Aug. 1 was 97.6, same as on July 1. The price had dropped in the two preceding months. The figure represents an average of reports from FHA's 71 insuring offices and not actual sales.

OFFERING PRICES, FHA 203s

ZONE	Immediate Delivery		AUG. 1, 1956	JULY 1	JUNE 1
	AVERAGE	RANGE			
Northeast	99.5	98-par	99.7	99.7	
Middle Atlantic	98.3	96.5-par	98.3	98.5	
Southeast	97.1	96-98	87.1	97.6	
North Central	97.2	96.5-par	97.8	97.1	
Southwest	97.8	96.5-98	97.4	97.6	
West	97.8	94-99	97.7	98	
US AVERAGE	97.6	94-par	97.6	97.8	

Delinquency ratios reported

FHA loan 30-day delinquencies showed a low 1.65% rate, while GI loan one month delinquency ratios were 1.91% in second quarter 1956, according to a Mortgage Bankers Assn. survey. Conventional delinquency ratio was 1.17%.

MORTGAGE MARKET:

FHA may allow lenders 1/2% service charge to increase mortgage yield

FHA may soon take a backdoor approach to a higher interest rate.

The device: allow lenders a 0.5% service charge on FHA mortgages. Thus the interest would remain pegged at 4.5% along with that of VA but the yield to the lender would go up to 5%. (Cost to the borrower, of course, would be 5.5% with FHA's 0.5% insurance fee.)

FHA reportedly believes this 5% yield will stimulate new interest in FHA paper and reduce—or even eliminate—discounts which currently range from one to three points.

The plan is not new. FHA currently offers an 0.5% service charge to lenders under Sec. 203 (I), the minimum house program. (Maximum mortgage: \$6,650.) It was started in an effort to get more lenders interested in this program of peanut mortgages.

If FHA decides to allow the service charge on all mortgages, insiders believe it may make the announcement at the same time it lifts the 2% extra down payment requirement—to mute the effect among critical Democratic Congressmen.

While FHA mulled this step VA mortgages, selling at discounts of as high as 8 points, continued to be dumped on FNMA's secondary market. Fanny May reported \$34 million in purchases in July, four-fifths of it VA paper.

Mortgage bankers queried in HOUSE & HOME's monthly mortgage survey reported the market tight—or tighter—than it was in July. Most of them are talking now in terms of semi-permanent tightness which may well extend through next year.

While builders welcome the changes in Fanny May made in the 1956 housing act, mortgage bankers were sharply divided.

Among those who dislike the changes was Robert M. Morgan, president of the Boston Five Cent Savings Bank. "These changes (standby commitment and reduced stock purchase requirement) will tend to make Fanny May a primary instead of a secondary market. It will become nothing but a dumping ground."

But said George W. De Franceaux, president of Frederick W. Berens Inc. of Washington: "Changes should have a beneficial effect. It will mean less money sunk in stock, more money active elsewhere in the market."

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MORTGAGE MARKET QUOTATIONS

(Sale by originating mortgagee, who retains servicing.)
As reported to HOUSE & HOME the week ending Aug. 11.

FHA 4 1/2s (Sec. 203) (b)

City	Minimum down*— 30 year		Minimum down*— 25 year		25 year, 10% down	
	Imme- di- ate	Future	Imme- di- ate	Future	Imme- di- ate	Future
Boston local	par-101	par-101	par-101	par-101	par-101	par-101
Out-of-state	96-97	96-97	96 1/2-97	96 1/2-97	97	97
Chicago	96 1/2-97 1/2	96-97	97-98	97 1/2-98	97 1/2-98	
Cleveland	96-96 1/2	95-95 1/2	95-95 1/2	94-94 1/2		
Denver	98-98 1/2	97 1/2-98	98-98 1/2	97 1/2-98	97 1/2-99	97 1/2-99
Detroit	97-97 1/2	96 1/2-97	97 1/2-98	97-97 1/2	98 1/2-99	98 1/2-98
Houston	97	97	97-98	97-98	97 1/2-98	97 1/2-98
Jacksonville	97-97 1/2	97-97 1/2	97-97 1/2	97-97 1/2	98	97 1/2
New York	99-par	99-par	99-par	99-par	99-par	
Philadelphia	99-par	99-par	99-par	99-par	99-par	
San Francisco	a	a	a	a	a	
Wash., D. C.	98 1/2-99	98	99	98 1/2	99	98 1/2

* 7% down on first \$9,000

SOURCES: Boston, Robert M. Morgan, vice pres., Boston Five Cent Savings Bank; Chicago, Maurice A. Pollak, exec. vice pres., Draper & Kramer, Inc.; Cleveland, David O'Neill, vice pres., Jay F. Zook, Inc.; Denver, C. A. Bacon, vice pres., Mortgage Investment Co.; Detroit, Harold Finney, exec. vice pres., Citizens Mortgage Corp.; Houston, Lewis Lewellen, vice pres., T. J. Bettes Co.; Jacksonville, George Dickerson, Stockton, Whatley, Davin & Co.; New York, John Halperin, pres., J. Halperin & Co.; Philadelphia, Laurence J. Stabler, vice pres., W. A. Clarke Mortgage Co.; San Francisco, Raymond H. Lapin, pres., Bankers Mortgage Co. of America.

VA 4 1/2s

City	30 year, no to 2% down		25 year, 2% down	5% down or more	25 yr.	
	Imme- di- ate	Future	Imme- di- ate	Future	Imme- di- ate	Future
Boston local	par-101	par-101	par-101	par-101	par-101	par-101
Out-of-state	94-96	94-96	95-96	95-96	96	96
Chicago	96-97 1/2	96-97	97-98	97-98	97 1/2-98	97 1/2-98
Cleveland	93	92	93	92	95-96	94-95
Denver	96 1/2-98	96-97 1/2	96 1/2-98	96-97 1/2	97-99	97-99
Detroit	95-95 1/2	94 1/2-95	96-96 1/2	95 1/2-96	97 1/2-98	97-97 1/2
Houston	95	95	95-95 1/2	95-95 1/2	96-97	96-97
Jacksonville	95 1/2-96 1/2	95 1/2-96 1/2	96-96 1/2	96-96 1/2	96 1/2-97	96 1/2-97
New York	99-par	99-par	99-par	99-par	99-par	99-par
Philadelphia	97	97	97 1/2	97 1/2	98	98
San Francisco	94-95	94	94 1/2-95	a	a*	a
Wash., D. C.	97	96 1/2-97	97 1/2	97	97 1/2-98	97 1/2

► Immediate covers loans for delivery up to 3 months; future covers loans for delivery in 3 to 12 months.

► Quotations refer to prices in metropolitan areas; discounts may run slightly higher in surrounding small towns or rural zones.

► Quotations refer to houses of typical average local quality with respect to design, location and construction.

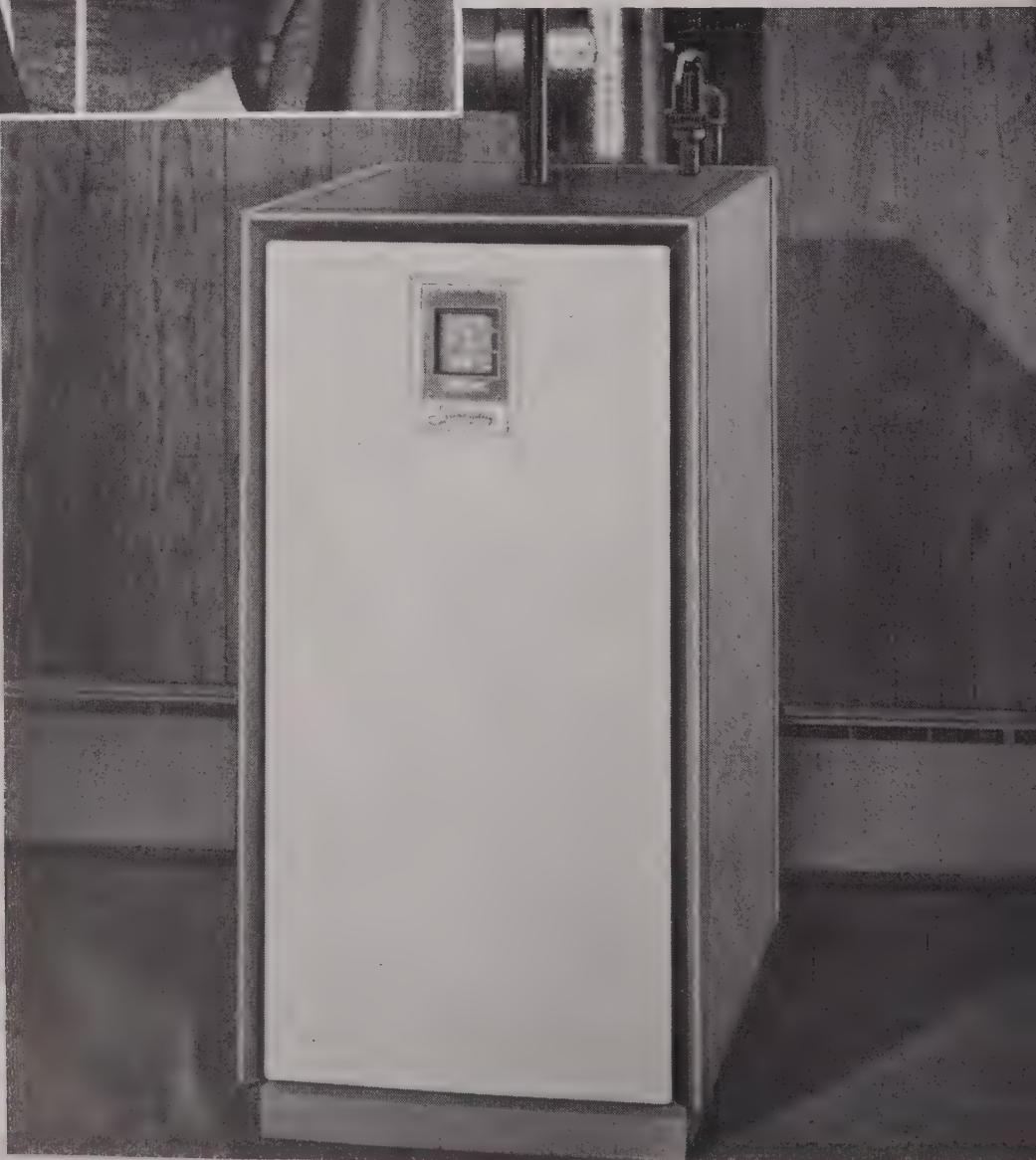
NOTES: a—no activity. * 20-year term, 97-98.

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Crane Sunnyday 15. Newest, most efficient residential boiler made. Saves up to 15% on fuel bills. Easy to install. Available factory assembled and prewired. Gas or oil fired. Flush or extended jacket. Appliance White front and modern styling make it handsome addition to utility room.



HOUSING MARKET:

Higher priced home is best seller on today's market

Higher priced homes are pacing the nation's housing market.

This is one of the significant factors in a cross country check made in mid-August by **HOUSE & HOME**.

The survey also showed that the present market is an extremely spotty one—ranging from extremely poor in one place to very good in another location just 50 miles away. The complete report:

Baltimore: Sales picked up in mid-summer, notably in higher price range. Mortgage money no problem.

St. Petersburg: Buoyed by incoming industry and retirees, sales are even better than in '55. \$8,000 to \$15,000 small homes top sellers.

Oakland, Calif.: sales picked up in \$12,000 to \$18,000 range.

Montgomery, Ala.: starts off but houses bigger.

Richmond, Va.: sales off but not alarmingly.

Oklahoma City: starts for '56 expected to be off 25% from '55. Best sellers now: \$15,000 to \$20,000 range. Under \$10,000 market is off.

Indianapolis: sales plunged after good spring. Mortgage market very tight.

Detroit: builders in \$20,000 and over bracket report good sales. Market otherwise spotty.

Wichita: 1956 starts off at least 50%. Prices on custom homes up from \$15,000 to \$18,000.

Boston: starts this summer off 35%. Lack of buyers, not tight money, is blamed.

Suffolk County, N.Y.: sales of low cost housing in far Long Island area off drastically.

Nassau County, N.Y.: sales slow in \$18,000 range but better in \$20,000 to \$50,000 range in close-in Long Island area.

Springfield, Mass.: custom builders doing very well. Project home sales off 50% this year.

Louisville: sales picked up in mid-summer in \$15,000 to \$20,000 bracket. Starts for year expected to drop 5 to 10%.

Sioux City, Ia.: starts off 20%. Average home priced at \$14,000 to \$14,500.

Baton Rouge: new industry is helping '56 sales. Best price bracket: \$12,000 to \$18,000.

Des Moines: market steady. Best seller: a 3 bedroom, 1½ bath for \$16,000.

Battle Creek, Mich.: sales very slow. Most homes now built on contract only.

Fort Dodge, Ia.: sales off 60%, mostly because of lack of mortgage money.

Dayton, O.: market way off this year but some big projects already planned for '57.

Lincoln, Neb.: though starts are off 50% from '55, sales in the \$18,000 to \$20,000 bracket are very good. Custom builders have been unaffected by the slow down.

New Jersey: expensive homes selling well in northeast. Market slow and starts off 26% in the coastal area.

Omaha: sales are off 28% but builders expect a pickup this fall. Best selling homes are priced around \$15,000.

Atlanta: summer sales good.

Miami: sales 10% off. No market under \$10,000. Best price bracket: \$15,000 to \$17,000.

Jacksonville: sales off 50%. Buyers so loaded with short term credit, qualifying difficult.

Phoenix: big builder sales off 60%. Tight money market blamed.

Milwaukee: brightest spot in the nation with starts up 13.8% from '55.

Tulsa, Okla.: starts down 30% because of difficulty in getting construction money.

San Diego: market strong. Starts equal to '55.

Wilmington, Del.: GI starts way off. Best price bracket \$25,000 to \$27,000.

New Orleans: market good. Best sales bracket: \$22,000 to \$25,000.

Salt Lake City: market good, after slow spring. Starts up 7%, prices up 3% from '55.

Fort Wayne, Ind.: sales fair. Mortgage money in very short supply.

Bridgeport, Conn.: market very good. One builder sold 35 houses in one week from a model.

Pittsburgh: sales good. Most activity in \$16,000 to \$20,000 bracket.

Rhode Island: off from last year but still fair. Main casualties: one-house-a-year carpenters.

Memphis: starts down 25% from '55.

Houston: sales slow. Most popular seller: 3 bedroom, 1½ bath, priced \$13,000 to \$15,500.

Los Angeles: still lousy.

MARKET BRIEFS**Used homes selling best**

An 11-city survey by the Wall Street Journal confirms what builders and realtors already know—the used home market is better than the new home market today.

Brokers, builders and FHA men questioned by the Journal gave these reasons for the changing market: prices on used homes are lower, they are closer to shopping and schools in established neighborhoods, living areas are roomier, landscaping and community facilities are already in place.

LA boom costs farm title

Los Angeles postwar home building boom has cost the county another distinction.

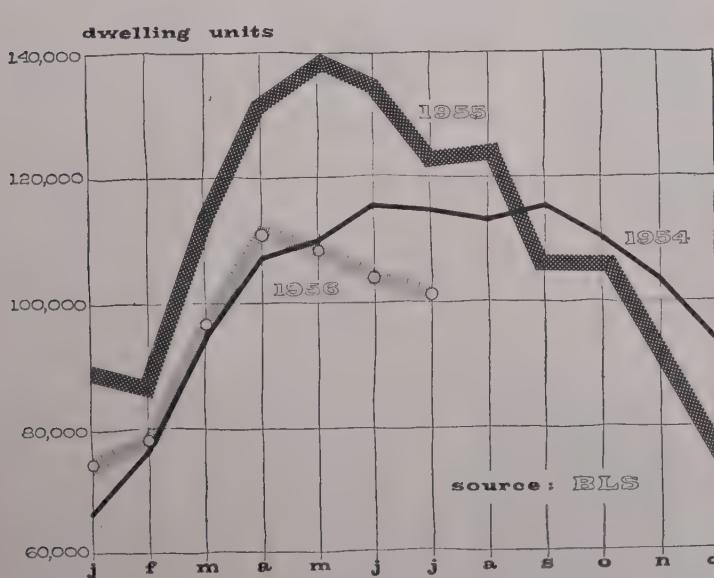
So much farmland has been subdivided for building that the county has just dropped from its perch as top U. S. farm county. (The new leader: Fresno County, Calif.)

'56 construction tops '55

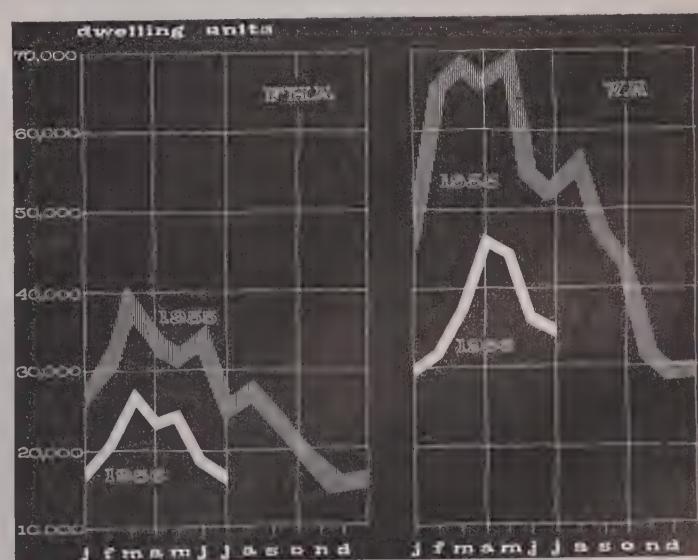
Total construction activity continues high despite a 9% drop in home building.

Estimated spending for the first seven months of 1956 was up 2% over 1955. Eliminating home building from the picture, all other construction was up 9%, with private industrial building up 29%; commercial building up 18% and highway construction up 16%.

NEWS continued on p. 66



Housing starts are 17.3% below last year's level. Starts for the first seven months of '56 total 676,200 (662,900 private and 13,300 public) compared to 818,100 for '55. July starts totaled 101,000 (99,100 private and 1,900 public) falling off from June's 104,000. Seasonally adjusted annual rate remained at 1,070,000, same as June, and lowest of the year.



FHA and VA applications leveled off somewhat in July after a June nosedive. FHA applications actually increased 6% (from 18,331 in June to 19,484, still 22% below the 25,197 of July, 1955). FHA termed the increase an erratic contraseasonal trend. VA appraisal requests dropped 2% (from 35,620 in June to 34,634 and off 32% from the 51,412 of July, 1955).



What's a "Swing" Got to do with Insulation?



Here's a lively demonstration that drives home the ruggedness of Balsam-Wool insulation. Build a simple frame of 2" x 4" lumber; suspend a short length of 16" Standard Balsam-Wool from the top as shown. Add a "swing"...and you're ready to demonstrate just how tough Balsam-Wool is!



What does this swing test prove? Simply this: Balsam-Wool is built to withstand *tough* handling on the job...yet it's so *gentle* and *clean* to use. This rugged insulating blanket is designed for site application or prefabrication operations.

An insulation has to be good to stand up under this demonstration. Insulation that doesn't tear easily, pull apart or settle on the job...fully measures up to good application standards.

There's nothing flimsy about Balsam-Wool Sealed Insulation. It's built *rugged* for good application results that mean maximum efficiency on the job.

Chances are you may not build such a "swing"...but you can demonstrate Balsam-Wool's *ruggedness* with a simple product sample which shows:

1. Tough cold and warm side liners (*effective barriers against wind and moisture passage*).
2. Bonding of insulating mat to liners (*insulation stays put for a "house-time"*).
3. Rugged spacer flanges (*a reinforced flange for application to framing, providing important air spaces*).
4. Low thermal conductivity (*soft, non-irritating wood fibers effectively stop heat and cold*).

Balsam-Wool sealed insulation is sold by lumber dealers. You'll like the way it *handles on the job!* Wood Conversion Company, Dept. 236-96, First National Bank Building, St. Paul 1, Minnesota.

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RUGGED AND PROTECTED



Second-time buyers are big market in Dallas area, housing study shows

Who says the Dallas market is oversold?

One-third of the 280,000 families in Dallas County say they want to buy a new house in the county within the next two years.

Main reason given: to get more space, more storage, more garage. A whopping 53.1% said they would buy sooner if they could get trade-ins.

These are some of the findings in a housing survey conducted by Dr. Jerry E. Drake, head of SMU's School of Marketing. He interviewed 405 families scientifically selected to give a good sample.

The survey satisfied Drake that more Dallas builders should aim at the second-time buyer market, though of course he does not take too seriously the idea that 90,000 Dallas families will buy a new home there (last year's total new house sales—almost 15,000).

Architectural preferences of interviewees (based on pictures of various styles shown them) set the following pattern: ranch, 36%; modern, 31%; early American, 10%; contemporary, 8%; conventional, 6%; French provincial, 2%. An overwhelming 82% wanted masonry.

Dr. Drake found that the multiple bath has practically become "standard." 43% indicated a preference for two baths, compared to only 25% for 1½ baths, and 22% for one.

There was an almost even division of about 17% in the first five price ranges (under \$7,500, \$7,501-\$10,000, \$10,001-\$12,500, \$12,501-\$15,000, \$15,001-\$20,000) tailing off to 10% in the over \$20,000 bracket. 43% wanted to make a down payment of under \$1,000, 26% from \$2,000 to \$4,000, while only 0.7% wanted to make no down payment. A surprising 6.7% said they were ready to pay all cash. Drake said the comparatively large down payment reflects a desire for low monthly payments (26.9% wanted monthly payments of \$61-\$75, 15% wanted \$51-\$60, 12% wanted \$50 and under.)

Asked if they wanted their house insulated, 358 or 88.4% said "yes." Also many buyers wanted built-in appliances. 48% wanted both a built-in stove and a garbage disposal, 42% wanted a clothes washer. (Of 26 new features that interviewees said should be added to the

Housing securities starts regional market forecast

National housing start forecasts—valuable though they are—do conceal a lot of criss-crossing local trends.

While starts may be dropping overall, they may drop more in Los Angeles than in Miami and they may actually go up in Milwaukee (as they have).

Housing Securities Inc., investment firm headed by former NAHB President Tom Coogan, has issued the first of a monthly series of forecasts aimed to break the national outlook down to local levels.

Main use for the forecasts: Coogan feels it will be a reliable indicator to materials suppliers and mortgage men where housing activity will be greatest so they can adjust their operations accordingly.

The first forecast has some surprising predictions: starts in Kentucky will be off 23.8% in the next six months while those in Florida will rise 4% compared to the same six months of 1955-56.

Here is the state by state outlook in the southeast for the next six months: Alabama, -5%; Arkansas, -4.4%; Georgia, -5.3%; Louisiana, -0.8%; Mississippi, +3.3%; North Carolina, -4.8%; South Carolina, -7.9% and Tennessee, -10%.

home, 24 had already been made available by one or more builders, Drake noted.)

Although Drake's study was worked out in detail before *HOUSE & HOME*'s January Dallas story was written, he said that he had studied it extensively, found it "a very thorough thing and referred to it often."

HOUSE & HOME's story showed that when buyers had a choice, they strongly preferred houses with built-in appliances, insulation, good storage, open planning, trade-ins, indoor-outdoor living, less housework, color, air-conditioning and more house-for-the-money.

Said Harold F. Smith, president of Dallas' Home Builders Assn. of Drake's poll: "The survey is as thorough and as factual as man can attempt in his effort to look into the future. It contains many facts and ideas that members of our industry will do well to study in planning work of the next few years."

Chicago flops in effort to build sale housing

Chicago's flyer in middle income housing for sale is costing the taxpayers a whopping \$400,000 for just 52 units. This is nearly \$8,000 each.

The 52-unit, 3.6 acre project, developed by the Chicago Dwellings Assn. as an experiment, cost some \$1,055,000 to complete. Now the city is trying to sell it off for about \$612,000, according to William B. Kean, CDA executive director.

Even at this markdown there is no rush to buy. Only about half of the 52 units on sale since Jan. 1 have been sold so far. Current terms call for a 10% down payment and monthly payments of about \$70.32. Two bedroom units are priced around \$11,100; three bedroom homes up to \$13,300. All but six are FHA financed.

John R. Downes, executive vice president of the Chicago Metropolitan Home Builders, was not surprised at the dismal results.

Said Downes: "Private industry could do the job faster and more efficiently."

FHA and VA in Tennessee resolve MPR differences

FHA and VA in Tennessee have agreed to end 137 differences between their requirements.

In theory FHA and VA use the same MPR. In practice there are always differences due to varying interpretations and VA refusal to accept FHA modifications. As a result builders are plagued with two sets of standards for any house that may be sold either FHA or VA.

The Tennessee agreement is the first reached on a statewide level. It came after lengthy talks between G. R. Norfleet, VA loan guarantor officer, Fred Stair, East Tennessee FHA director, and James E. Kerwin, West Tennessee FHA director.

Until VA in Washington approves the agreement details will not be revealed. Among the points covered are soil tests for footings, nailing methods, interior bathroom ventilation, and cold air ducts for heaters.

Loyalty oath requirement dropped in public housing

Persons renting public housing need no longer sign loyalty oaths.

The Justice Dept. has notified PHA that authority to require it expired along with the 1954 appropriations act—to which it was tagged.

In its three years only one man was evicted for not signing. He moved out without appealing.

FHA gets proposal for aged housing standards

Should a home for elderly persons differ from any average US home? Should it have special facilities and design features?

FHA's top men admit they don't have the answers, so they have launched a study to get them. Said FHA Chief Architect Neil Connor: "We already have projects in here we don't know what to do about."

Chief advisor to FHA on its study is Prof. Walter K. Vivrett, architectural design instructor at the University of Minnesota. He worked with Reni



VIVRETT

FHA's architectural staff for a month this summer to formulate construction standards for housing aged persons. Here are the new FHA requirements recommended in his preliminary report:

He advocated larger bathroom doors wide enough for people on crutches or in wheelchairs, stronger towel racks that will not pull loose if they are grabbed for support, handrails by

all steps, ramps instead of short stairs, easier-to-turn lever-type door handles instead of door knobs. One-story houses are best and they should be near public transportation and recreational facilities.

Vivrett suggested that FHA require some of these design changes in all homes. Said he: "A few of these commonsense steps would make any house more desirable for people young or old."

This same suggestion is also made by architects in St. Petersburg, in the heart of Florida's retirement belt. Mass-interviewed by Associate Editor Douglas Doubleday of the *St. Petersburg Times* (and *HOUSE & HOME*'s correspondent there), they also agreed that:

Elderly men and women should not and generally do not want to colonize in segregated retirement communities. "They should live where they can see baby carriages as well as hearses," said Architect Howard F. Allender.

Summed up Architect William B. Harvard: "Design standards should be the same in anything built. What we need is not more specialized design but an upgrading of all design."

Price, not tight money, slows Long Island sales

Why are housing sales off even where money is still easy?

Here is the answer offered by a Long Island mortgage banker, Lomas Realty Securities Corp. who predicts the decline in starts on Long Island will be greater than the national decline despite a plentiful supply of mortgage money:

"New York builders can get all the money they want at par, so they must look elsewhere for the diagnosis of their sick industry. We suggest as causes: (1) much housing on Long Island has priced itself out of the market; (2) the transportation problem.

"A nationwide survey discloses the median house price rose from \$13,050 to \$14,500, due to increased land and material costs. These figures hold good—and then some—for Long Island. To this \$1500 jump add a \$15 monthly hike in school taxes and you automatically eliminate many would-be buyers because their credit can't qualify. Moreover, many people who could qualify won't swallow the increases even though they want housing. These are the increases that have paralyzed the industry."

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MATERIALS BRIEFS

Plywood distributors push sales

You can see evidence of stepped-up sales efforts everywhere. Natl. Plywood Distributors Assn., for example, has just decided to use its "promotional fund" for local advertising, coupled with more cooperation with the Douglas Fir Plywood Assn. on sales training. Motivation, experts figure, is the unseasonal and drastic slump in plywood sales.

Lumber firm sees 10% sales rise

E. L. Bruce Co. of Nashville, Tenn. expects sales to rise 10% this year above 1955 levels, despite dropping housing starts.

President E. L. Bruce Jr. thinks starts, now down 18% from a year ago, will bounce back to 10% below 1955 (which would be slightly under 1.2 million). But he expects "increased production and increased sales of our other products to boost Bruce's dollar volume," anyway.

APPLIANCE BRIEFS

Heating systems to be certified

A plan to "certify" heating and air-conditioning units and duct systems is announced by the Cuyahoga County Sheet Metal Contractors Assn., Cleveland.

Certification guarantees heating of all living areas of the house at 75 degrees or above when outside weather is five degrees below zero. Certified installations will be backed by a bond for a year's guarantee.

Inside openers required

President Eisenhower signed into law a bill requiring refrigerator manufacturers to equip doors with safety devices, so they can be opened from the inside.

The legislation is designed to eliminate the possibility of children being trapped in discarded refrigerators.

MATERIALS:

Lumber industry starts two new studies of materials handling problem

An action program, aimed at promoting more unit packaging and shipment of lumber and lumber products, has been mobilized by the lumber industry.

Keying its plans to the recommendations of HOUSE AND HOME's materials handling Round Tables in February and April, a two-pronged research program has been undertaken:

1. The Natl. Retail Lumber Dealers Assn. has appointed a materials handling committee and named a research director to study, recommend and promote ways of extending unit packing and shipping.
2. The Natl. Lumber Manufacturers Assn. has announced a two-year plan for research in materials handling. Timber Engineering Co. of Washington, D.C. will direct it.

NRLDA's committee has outlined a five point program including conferences with railroads on unit sizes, methods of loading and the problem of proper rolling stock to handle unit loads.

NRLDA wants more bulkhead flatcars and more wide-door (15') boxcars. Railroads have balked at buying more bulkheaded flatcars (only 5,000 are in service) contending that a bulkheaded car has no other use and consequently must be deadheaded long distances after unloading.

In view of this argument, lumbermen have taken special note of a portable bulkhead devised by the Hallgate Corp. of Des Moines, Ia. It can be put on the car and taken off by two men—thus the car is easily converted to a standard flatcar. The portable bulkheads have the added advantage of mobility. They can be placed at any location on the car deck, facilitating loads of any length. Trial runs have been made from the Northwest to Midwest on the portable bulkheaded flat cars. Loads have arrived in perfect shape.

The Hallgate bulkheaded car and other new ideas in materials handling will be demonstrated Dec. 10 to 13 at the NRLDA convention.

Plywood hits postwar low as market continues soft

Lumber and plywood prices continue soft.

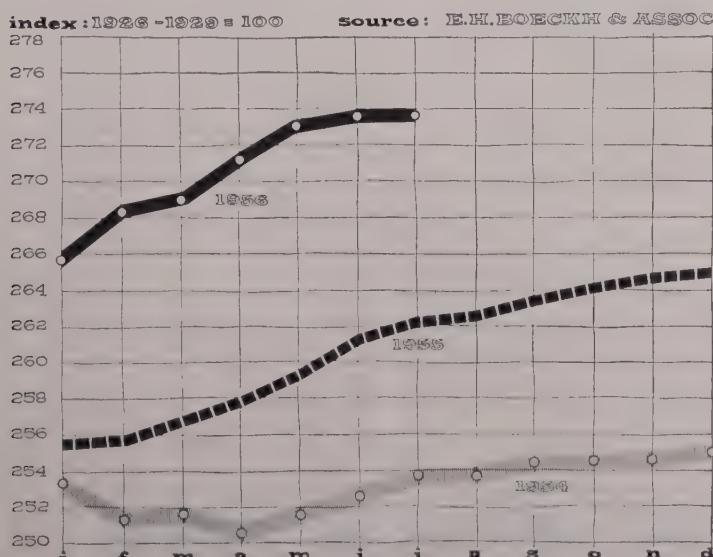
Plywood failed to hold the rise from \$76 to \$80 pegged early in July. Even at \$76 it developed a weak undertone for 1/4" AD index grade. Increased discounts tended to pull the price down to \$72, a postwar low. Plywood production clicked along at 87.7% capacity, still far ahead of orders. Some producers planned cutbacks to a four day week.

Fir lumber orders climbed about 4% over production at larger mills where prices are firmer than at small green mills.

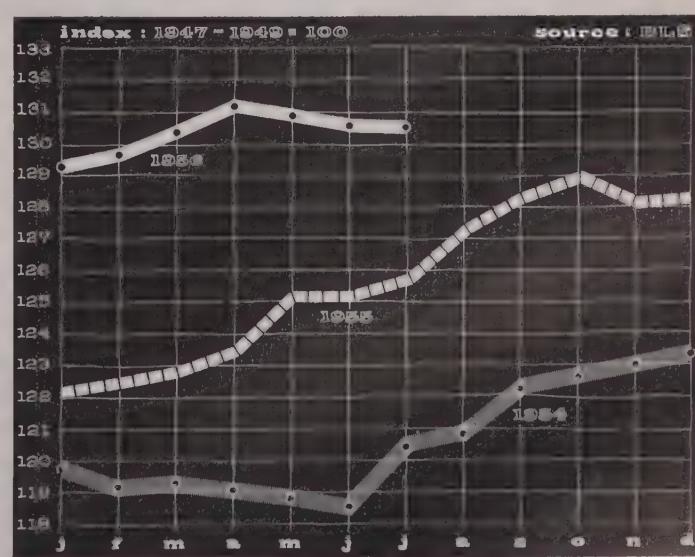
Fir studs, which bellweather the construction lumber market, were being offered by mills at \$60-\$61, but a few sales were reported at \$58-\$59, and in some cases considerably lower.

Western pine sales continued to trail production while southern pine sales rose slightly.

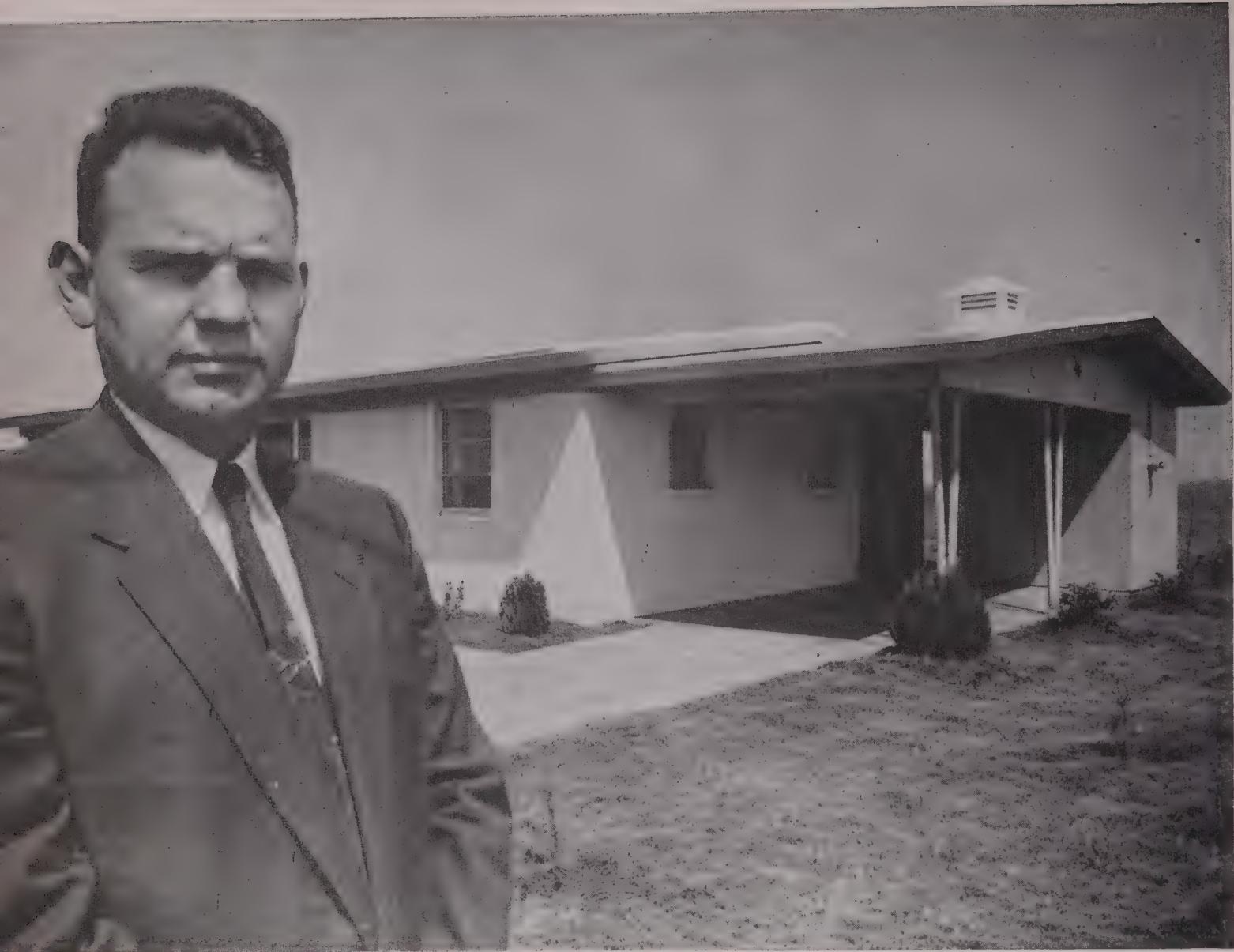
NEWS continued on p. 75



Boeckh's building cost index—for residential structures—went up 0.3 of a point to 273.9 in July. Col. E. H. Boeckh attributes the increase to higher labor costs. Atlanta, Dallas and New Orleans had the biggest wage boosts. Col. Boeckh predicts materials costs will also climb in coming months due to higher steel prices. Lumber costs continued to ease in July, due mostly to slackening home starts.



Building materials prices remained at 130.6 in July as they were in June. While most prices remained steady there were significant increases in prices of plate glass (4.2%), prepared asphalt roofing (6.4%) and structural clay products (2.7%). BLS reports increased wage costs contributed to price boosts for glass and clay products. Inventory changes produced the price rise for asphalt roofing.



Worthington year-round air conditioning sells houses before they're completed



Builder Tom Moody of Alabama actually saw it happen!

"We don't have a single unsold air-conditioned home today," says Mr. Moody. "The truth is, they sell before we even get them up for formal sale, while non-air-conditioned ones might sit on the lots for weeks before a buyer is found."

Profit-conscious builders today are wide awake to the fact that air-conditioning comes high on the list of every new home buyer. And, like Tom Moody, smart builders know that Worthington is the only unit that offers so many outstanding air conditioning advantages—

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WORTHINGTON



CLIMATE ENGINEERS TO INDUSTRY, BUSINESS AND THE HOME

NEMA studies standards for dimensional kitchen

Here is more action slowly evolving out of the NAHB-ASA-HOUSE & HOME Round Tables on dimensional standardization.

The Natl. Electrical Manufacturers Assn. has named a four-man committee in its major appliance division to study how to coordinate the sizes of kitchen appliances and kitchen equipment. Chairman is Harold Hulett of GE. Members are: William Kline Jr. of Westinghouse, John C. Martin of Frigidaire and E. P. Van Sciver of Philco.

As the first step Chairman Hulett has tentatively suggested that home builders should standardize on a 1' module for the kitchen wall. This raises the old chicken-and-the-egg question of whether builders should put their kitchens on the 1' module before the appliance makers agree to fit that module, or vice versa. But it also shows the appliance makers realize the even foot module recommended by the NAHB-ASA-H&H round table offers the only basis for reconciling the 3" module of kitchen cabinets with the 4" module of everything else in the house.

The NEMA Committee plans to ask the Wood and Steel Kitchen Cabinet Manufacturers Assns. and the Home Laundry Manufacturers Assn. to work with them on the dimensional coordination program.

Adequate Wiring Bureau gives Housepower formula

At last home buyers can know what appliances their home is wired to handle and what added wiring costs they may face to use the equipment they want.

To this end the National Adequate Wiring Bureau has worked out HOUSEPOWER Rating Forms, one for new houses, the other for rewired homes. The electrical contractor certifies to the homeowner just what his electrical wiring does or does not provide for.

Big advantage of HOUSEPOWER is its list of electrical items which eliminates need for technical terms, makes common ground for understanding between homemaker and electrical contractor.

Cement shortages noted as makers up capacity

Cement makers are adding 47 million barrels to their capacity this year. But this apparently is not enough to keep abreast of demand.

Critical shortages of cement have been reported this summer by builders in Minneapolis and Milwaukee. Serious shortages exist in Baltimore, Birmingham, Boston, Cincinnati, Cleveland, Denver, Kansas City, Los Angeles and New York.

Three firms have raised prices 5 to 10¢ a bbl., reflecting wage increases granted this year. Other firms are holding the price line, largely because they just hiked prices last winter.

As the new federal road building program gets moving later in the year, the cement shortage may be more severe. (An estimated 16.6 million barrels of cement will be required for each \$1 billion of concrete roads in the \$33 billion program.)

Cement shipments this year are expected to hit 338 million bbls. The industry's capacity will probably reach 392 million bbls. per year by 1959.

And on the horizon—the threat of foreign competitors. Largest single shipment of foreign cement ever to arrive in Milwaukee—8,800 barrels—came in by boat from West Germany late in May.

NEWS continued on p. 79



New TRIMVIEW Aluminum Sliding Glass Doors

- are designed to help you sell your homes
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Here are just a few of them:

- All panels slide
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PEOPLE: Follin to resign as HHFA urban renewal director; FHA Deputy Sigety reported in line for job

James W. Follin, 64, HHFA's urban renewal director since June, 1953, will resign this fall.

He has already told HHFA Administrator **Albert M. Cole** that he will quit as soon as he returns from a trip to Bangkok. (Where he attended a UNESCO meeting as Cole's representative.) Friends say Follin will probably go into business when he returns—presumably as a consultant on renewal problems.

Richard L. Steiner, Follin's deputy will be acting commissioner until a successor is appointed. The man most mentioned for the job: **Charles E. Sigety**, deputy to FHA Commissioner Norman Mason.

FOLLIN

A promotion and a resignation were also announced in the ranks of HHFA and FHA.

H. Kingston Fleming, 55, FHA's director of public relations, has been promoted to assistant HHFA administrator in charge of congressional liaison and public affairs. A former newspaperman (The Baltimore Sun) Fleming will now direct all of HHFA's press relations work.

He succeeds **William A. Ulman** who resigned several months ago.

W. Herbert Welch, 40, assistant to FHA Commissioner Mason, has resigned to return to his home in Buckhannon, W. Va. and take charge of a semiweekly newspaper of which he is co-owner. No replacement has been named. Welch came to Washington in 1953 as staff director of the President's Advisory Committee on Housing. Later he was FHA's director of public information.



FLEMING

Neil Connor, FHA chief architect, is spending six weeks in Europe to see housing in France, Germany and Italy.

Russians finally complete deal for purchase of California home

Russian housing bosses will finally get their little home from the West.

Apparently prodded by publicity which strongly inferred he was a welcher, Soviet builder **I. K. Kozuilia** finally sent word to San Francisco builder **Andy Oddstad** to crate the house and send it to Russia. Kozuilia had ordered it during the Russian housing experts' US tour last October.

Oddstad won't make much—if any—money off the deal. (Price minus lot, \$8,000.) The house isn't a prefab. He has to build it first, then dismantle it in sections for crating and

shipping. Included in the deal is \$4,000 worth of furnishings and some house warming presents thrown in by residents of Oddstad's development.

Oddstad still isn't sure what the Russians want with the house. He thinks perhaps they expect to find the secret of how to build a good inexpensive home. If so, they're doomed to disappointment. Said Oddstad: "The secret is not in the house itself. They can knock it down and take it apart but the secret isn't there. The secret (as any US builder can testify) is in production planning."

Bill Hanna leaves Cleveland assn. to become home builder himself

William (Bill) Hanna, executive vice president of the **Cleveland Home Builders Assn.** since 1954 has resigned to become a builder himself.

Hanna, who was president of the NAHB Executive Secretaries in 1954, is forming a partnership with builder **J. W. Friday** in Pittsburgh. They will build contemporary houses in the \$25,000 price range and hope to develop an important trade-in house operation.

Mal Freeland, president of the Cleveland Builders Assn., has named **Jim Leibrock** executive director to take over from Hanna. He has been Hanna's assistant in charge of labor relations.

Ex-government housing official named Housing Center manager

NAHB has an important addition to its top brass.

Bernard E. Loshbough, 51, one-time government housing official, will be general manager of the National Housing Center. His task will be to bring together segments of the building industry in technical roundtables and to arrange special demonstrations and short courses dealing with industry problems. His appointment was made by Director Neal Hardy.

Loshbough left a job as deputy representative for the Ford Foundation in India to join the Center. He formerly served as assistant director (1948-49) and then director (1951-52) of the Division of Housing and Community Facilities, National Security Resources Board. He was also Administrator of the Connecticut State Housing Authority (1949-51) and president of the Middle Atlantic Council, National Association of Housing Officials (1947-48).

A graduate in architecture from Notre Dame (Class of '29), Loshbough specialized in the design of low cost, low rent housing. His first government job was as an architect with the National Capital Housing Authority.

CHASE LTD.



LOSHBOUGH

Soft spoken Loshbough has won a reputation in his various jobs as a man who knows housing and—probably more important in his new job—knows how to put across any program he undertakes.

ACTION adds information, program directors to staff

A program director and a public information director have joined the staff of ACTION.

Leo Molinaro, new program director, is former associate dean of Adult Education at the University of Akron. He was also a member of the Akron Planning Commission and a board member of the Ohio Planning Conference.

Allen Wagner, information director, is a former Minneapolis newspaperman. He was public information director for the American Transit Association before joining ACTION.

Ed Gavin dies of heart attack; Was Editor of American Builder

Edward G. Gavin, 58 editor of *American Builder* and one of the best loved men in home building, died of a heart attack July 28 in his Chicago home.

The fatal seizure came just minutes after he had laid down to rest after a day of working in his yard. He had had only one previous attack—a mild one on a trip to Mexico ten years ago.

Gavin, with his thatch of white hair and his rapid-fire talk, had for many years been a familiar figure wherever builders or lumber dealers met. He was much in demand as a speaker and traveled thousands of miles a year to address local building groups.

He would often recall to friends that when he first became field editor for a building magazine in 1928, he loaded his family and luggage into a two-door Buick and roughed it on the open road.

Gavin was born in Chicago and was a graduate of the Purdue University school of engineering. Before joining *American Builder* in 1945 he was editor of *American Lumberman* and of *Construction News*. He served in the Air Corps in World War I.

In addition to his post as editor of *American Builder*, he was also a vice president and director of the Simmons-Boardman Publishing Corp. He is survived by his wife, Elizabeth.

S&L man Bodfish urges changes in US overseas housing aid

At least half of all US housing aid funds sent overseas should be used to help foreign families buy their own homes.

So says **Morton Bodfish**, chairman and president of the **First Federal Savings & Loan Assn.** of Chicago and former executive vice president of the **US Savings & Loan League**.

continued on p. 83



GAVIN

Here's window beauty
to complement fine paneling



continued from p. 79

Bodfish gave his advice to the **Economic Cooperation Administration** after a three-week European trip. ECA wanted an expert opinion on how housing aid is being spent. Most of it is going into rental apartments and government-owned public housing.

Bodfish urged that all American housing aid be routed through private lenders abroad. He advocated it be earmarked for loans "on a long-term, amortized basis arrangement that is economical to the borrower."

In addition to government aid, Bodfish said an effort should be made to get private funds into the European home mortgage market. "This could then become a continuing opportunity for investing our savings abroad in housing just as we now try to encourage industrial investments," he said.

St. Louis Builders Assn. names R. J. DeSutter executive director

St. Louis home builders split the duties of executive officer into two parts. The new executive director is **Robert J. DeSutter**. He succeeds **Milford T. Schick** who recently resigned.

Half of Schick's former duties have been assigned to **Mel Dorenhofer**, 27, who becomes home show director and director of National Home Week in the St. Louis area.

DeSutter has been chief accountant for the Ramsey Corp. of St. Louis.

DIED: **Nat N. Wolfsohn**, 53, millionaire president of Philadelphia's **Eastern Mortgage Service Co.**, was found July 4th washed up on a mud flat of the Schuylkill River. Death was apparently a suicide.

Wolfsohn had been under a doctor's care for diabetes for about 15 years. Police said he had been mentally depressed.

Wolfsohn entered the mortgage business in the Twenties, founded Eastern Mortgage in 1938, made it one of the largest (\$200 million in outstanding loans) in the country. Wolfsohn was also a past president of the Philadelphia Mortgage Bankers Assn.

David Solms, new Eastern Mortgage president, reveals that Wolfsohn's unprobated will creates a trust empowering the trustees to continue the business "for a long period of years." Wolfsohn's widow, from whom he was separated last spring, will probably get half his estate. His brother **Philip** is still active in the firm as vice president and secretary.

OTHER DEATHS: **Walter M. Hebb**, 51, developer and president of Tyler & Rutherford, Inc., Washington, D. C. real estate company, July 4 in Washington, D. C.; **Ernest J. Russell**, 86, former AIA president, July 11 in St. Louis; **W. W. Woodbridge**, 72, former secretary-manager of the Red Cedar Shingle Bureau, July 18 in Seattle; **Edward J. Pender**, 35, advertising manager of United States Steel Homes Inc., July 19 in Louisville, Ky.; **Hugo P. Albrecht**, 62, real estate broker and former St. Louis FHA director, July 20 in St. Louis; **Alex Kessler**, 60, house and apartment builder, July 31, Jamaica, N.Y.; **Elton Leroy Usilton**, 63, retired Arlington, Va. builder, Aug. 7, Bethesda, Md.

NEWS continued on p. 90

For better living...

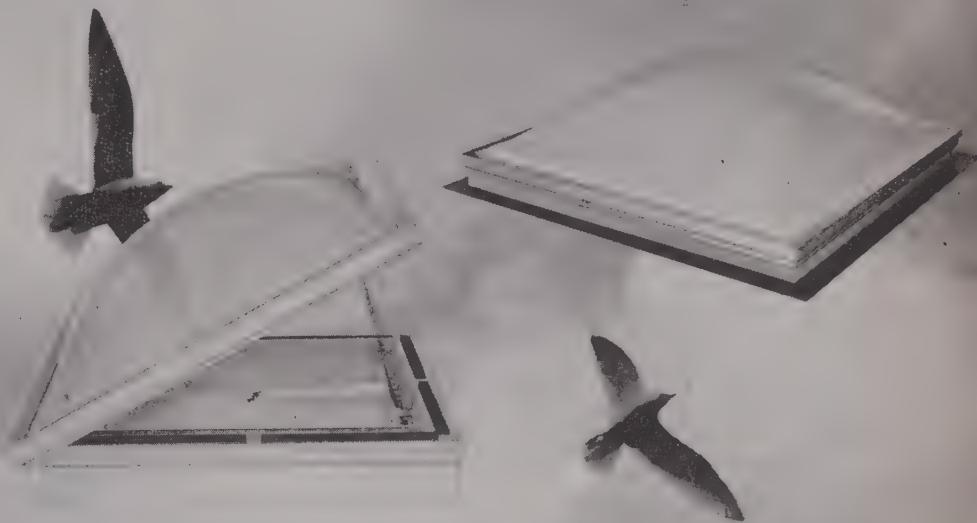
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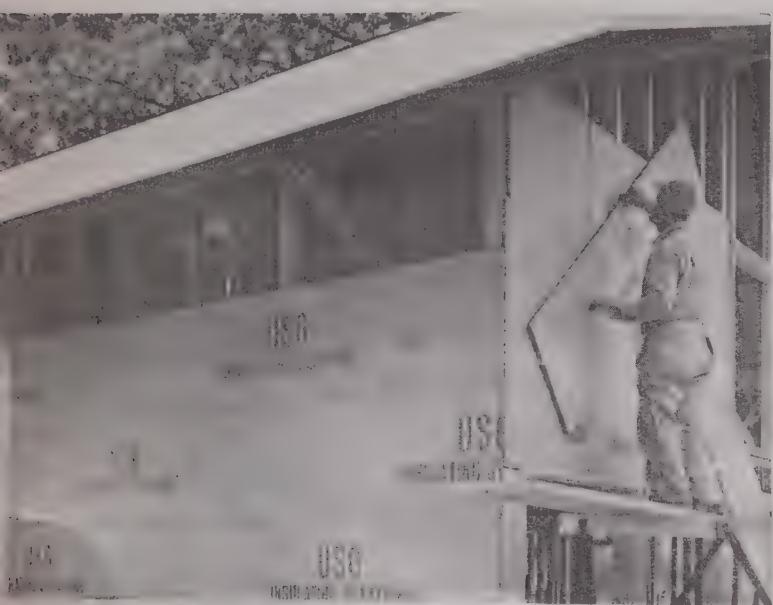
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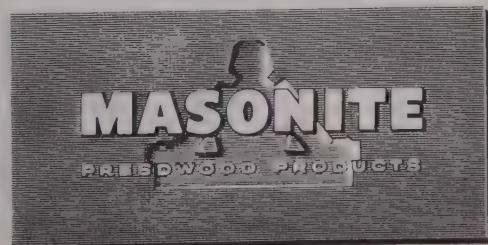
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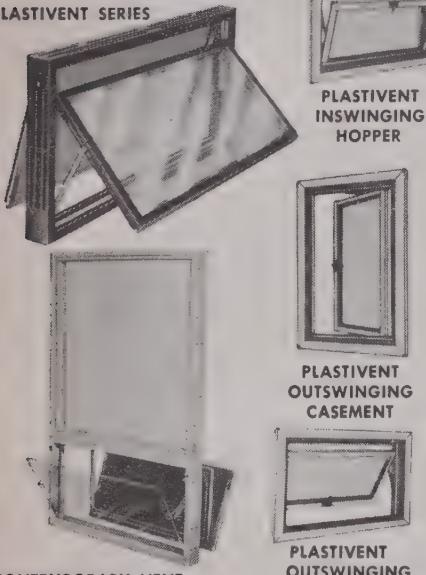
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OPINIONS:

These intellects shed the following light on matters of moment to housing:



Erich Hartmann

Editor - in - chief John Fischer, in *Harper's Magazine*:

"Chances are that in your own town, at this very hour, somebody is getting ready to bulldoze away one of the few remaining meadows or patches of woods. They will do it in the name of Progress—a convenient word to cover the prefabricated slums-of-tomorrow, the asphalt parking lots, the endless concrete scabs of the new highways. They can nearly always prove—to the satisfaction of the city council, dominated as it usually is by real estate men—that we can't afford to leave a little open space here and there. . . .

"The end result of this variety of Progress is the Bronx. It is nearly all of eastern New Jersey. It is the West Side of Chicago. . . . Give us a few more decades, and most of the US accessible by auto quite possibly will look the same way—and by that time the ruination of a once-splendid continent will have gone so far that no remedy is possible. . . ."



Charles Abrams

Charles Abrams, chairman, NY State commission against discrimination:

"In two trips around the world, I have found that the more developed a country is, the worse its housing problem; the more primitive, the less its housing problem. In the bush areas of the Gold Coast [of Africa], I saw reasonably well planned villages, with as little coverage of the land as the women had on their bodies. They lived in one-story buildings; the roofs were hard and flat, forming a street leading directly from the road; there was ample yard space and cool shelter.

"The tribal system was nearer to a co-operative than any in America. Land was free and building materials were nearby. A house built by our Neolithic ancestors after they had discovered the flint ax, with its pitched roof and fireplace, on 900 sq. ft. of land, would bring \$1,500 a season today in Miami."



William Scheick

William Scheick, executive director, Building Research Advisory Board in talk to American Institute of Timber Construction:

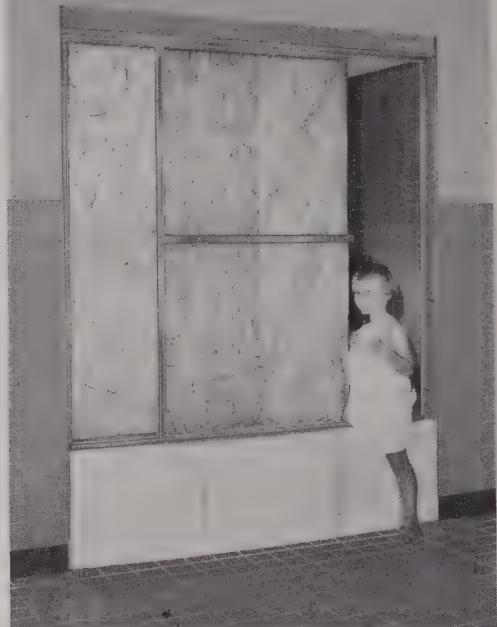
"I feel certain that the trend in building technology is more and more toward prefabrication of large building components, and that these of necessity are also combinations of various materials. . . .

"Looking to the future in building science, I am sure that the most interesting developments are still in the making. . . . The three types of buildings receiving the greatest attention in research will be houses, hospitals and schools."

for LEADERS ARE DOING, see p. 182



A unique new bath enclosure



unique new beauty . . .
unparalleled for
safety . . . easy cleaning

Here's a bath enclosure that ends danger of shattered glass. Gives maximum sealed-in protection, with a swirling thread design in fiberglass that will add beauty to any decor.

- Reinforced fiberglass panels are sturdy and eliminate breakage.
- The extended aluminum frame gives strength for roughest treatment.
- New finger width bottom rail makes for easiest cleaning possible.
- Polished aluminum parts, and exclusive modern design fiberglass laminate give smart new beauty everyone will like.
- Nylon roller and guides end noisy movement and expensive maintenance.

For Details of Distributors and available Distributorships write

VENTAIRE CO.

P. O. Box 5098 • Tulsa, Oklahoma

air-conditioning costs

In hot, humid New Orleans, where every home he builds is air conditioned, Frank R. Gatti, Jr. knows that each dollar per month saved in cooling costs is mighty important to the owner.

"We use Insulite Sheathing exclusively," he says. "Insulite adds extra insulation so buyers of Gatti homes enjoy cool comfort at less expense. And we insulate each home with Insulite Insulating Wool, for extra protection from the heat. Because there's no waste with Insulite Sheathing, we're able to save \$85 per thousand square feet compared to wood."

Gatti, a member of the Home Builders of New Orleans, finds Insulite Sheathing is easy to cut, prevents "gumming" of saws and blade damage. It stores well on the job in any weather. And because Insulite Sheathing has pre-marked nail spacing, he never has to stand over the job.

Whether you build \$10,000 or \$100,000 homes, you can build better and save with Insulite. For detailed data on Insulite Sheathing, Insulating Wool and other money-saving products, write Insulite, Minneapolis 2, Minn.

build better and save with

INSULITE



ANNOUNCING New Remington Cartridge-Powered Tool for Stud Fastenings

REMINGTON "MIGHTY MITE" STUD DRIVER sets a stud a minute in steel or concrete!

Here's the "MIGHTY MITE"—small but powerful partner of the full-size Remington Stud Driver—the answer to any job requiring a $\frac{1}{4}$ " diameter stud. It's the perfect tool for builders, light contractors and the "do-it-yourself" market . . . can be rented or purchased. You can buy it for only \$34.75!

The "MIGHTY MITE" has only three parts to handle . . . easy to load and operate. The upper assembly is unscrewed, the 22 caliber cartridge with the desired $\frac{1}{4}$ " stud is inserted, and it's ready to go. One rap of the hammer on the firing pin, and "MIGHTY MITE" rigidly anchors wood sections or steel fixtures to concrete or steel! No pre-drilling required.

Safe, too. It's non-tilt—cannot be fired at an angle; cocks only when held in the proper firing position; must be pushed firmly in position to expose the firing pin. A four-inch-square guard provides full protection to the operator.

Send for the facts about the REMINGTON "MIGHTY MITE"—small, powerful and ideal for your construction job—at the lowest possible price—

ONLY

\$34⁷⁵



Another great NEW cartridge-powered industrial tool by

Remington



Industrial Sales Division, Dept. HH-9
Remington Arms Company, Inc.
Bridgeport 2, Conn.

Please send me your free booklet which shows how I can speed the job and save with the new Remington "Mighty Mite" Stud Driver.

Name _____ Position _____
Firm _____
Address _____
City _____ State _____

THE KEY TO THE MARKET

Sirs:

We have seen a great many changes in our business over the past 30 years. Sometimes we have realized these changes too late. This time we hope we can be fore-sighted enough to adjust ourselves and our way of doing business to what is ahead.

"People no longer build houses; they buy them." This, I believe is the key to the marketing problem before the building materials merchant today. We have found that in the cities more than 80% of the houses are now built for sale. Only in the smaller communities are more houses built by the owners for their own use.

The home building industry today is a very fluid industry compared to the somewhat static industry of several years ago. Through credit, the entire concept of home ownership has changed. My generation was taught that some day, with success and savings, we might be able to buy a home, and that was the place to live for the rest of our lives. That is certainly an outdated idea now. Today we are finding that the smart builder is creating a desire for new homes, much like the automobile manufacturers. We think that this is just the beginning of their new basic concept of home ownership.

GANAHL WALKER JR., president
Builders Supply Co.
San Antonio

MATERIALS HANDLING

Sirs:

Thanks for the wonderful presentation of the Round Table regarding Materials Handling on a mechanized basis (June issue).

Every retailer who wants to improve his handling methods and so cut his costs will appreciate your efforts to focus opinion on this important issue and get the railroads and sawmills to cooperate fully with their distributors.

We solicit your continued interest in this project and feel confident that the next two years will bring good results even beyond our present dreams.

V. JOS. WARDEIN
Gintner-Wardein Co.
Alton, Ill.

Sirs:

. . . A very commendable job . . . a real help to building and maintaining interest in mechanized handling.

ARTHUR LAHEY, manager product lines
Weyerhaeuser Sales Co.
St. Paul

THE BUYERS' MARKET

Sirs:

The July editorial was a honey!
NORMAN STRUNK, executive vice president
US Savings & Loan League
Chicago

Sirs:

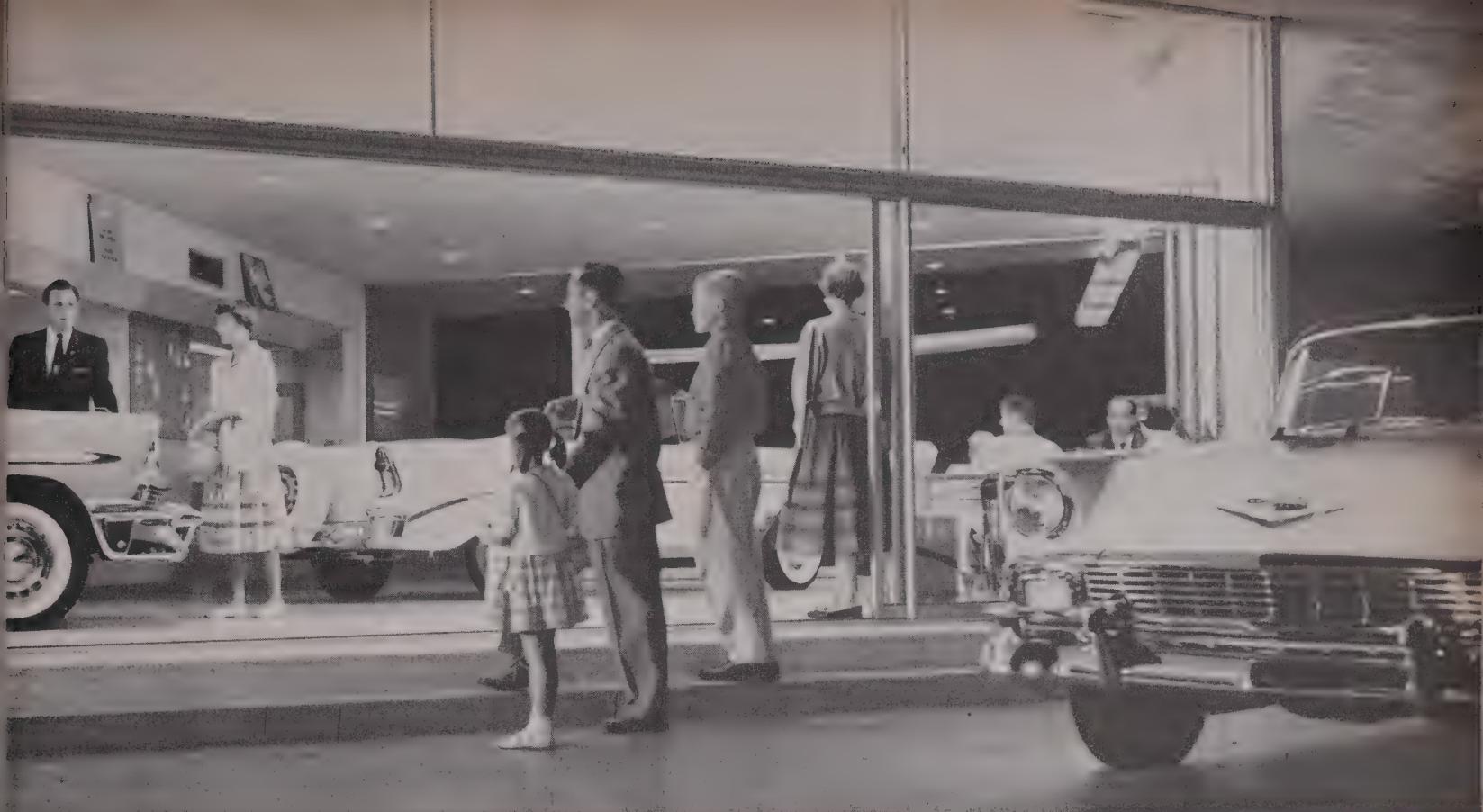
. . . A fine July editorial.
ROBERT CLANCY, director
Henry George School of Social Science
New York City

MIX-UP IN LOUISIANA

Sirs:

Your July story on the Leaders says our houses are built in Baton Rouge. Should have said Shreveport.

FRANK ZUZAK
Shreveport
continued on p. 98



AUTO SHOWROOMS



Easy entry to showroom floor
is assured by these Ador sliding
glass doors. Note how the use of
wide glass areas assures superior
visibility and better display.

Transoms extend glass area.
For heights above the standard
6' 10" and 8' 0" doors, Ador has
designed transoms to extend
glass areas up to 12' in height.



Ador America's Foremost
All-Aluminum Sliding Glass Door

with Arco Shadow Texture checking doesn't bother

General Homes.

FORT WAYNE, IND.

ANY BUILDER CAN
TAKE ADVANTAGE OF
PRACTICAL PLYWOOD
INTERIOR CONSTRUCTION

Take a
tip from a
well-known pre-
fabricated homes
manufacturer...General
Homes. Use plypanel, grade
A-D, for interior walls or built-
ins, and spray-applying Arco
Shadow Texture Wall Finish.

As a finish coat, or base for flecking, this
heavy-bodied paint bridges and conceals
knots, boat patches, grain irregularities and check-
ing...dries to a uniform flat sheen and
color. One coat satisfies F. H. A. require-
ments.

Try plypanel—with Arco Shadow
Texture Finish. Or for
gypsum board... roller,
brush or spray applied
...specify Arco
Ripple Texture
Wall Finish.

THE ARCO COMPANY
7301 Bessemer Avenue • Cleveland 27, Ohio

Gentlemen:

Please send information on

Shadow Texture Finish Ripple Texture Finish
 Color Styling Kit

NAME

COMPANY

ADDRESS

CITY

ZONE

STATE



FREE

SLIGHT TO THE SITE?

Sirs:

Something is missing from your pres-
entation on "What the Leaders are
Doing" (July issue). It is a fine article
as far as it goes, but it slighted the im-
portance of site planning.

To make a point, I will make this
exaggeration: I would rather have medi-
ocre home design on a top-notch site plan
than superior home design on a mediocre
site plan. I would think at least some of
the "leaders" must be doing a better job
of site planning than the too prevalent
grid-street and narrow-lot site "planning"
done by many builders who now complain
about slow sales.

If you have heard what prospective
buyers and lenders say as they look at the
houses on grid streets in many areas, you
will know what I mean.

JAMES S. WATTENMAKER
Cleveland

ACHIEVEMENT

Sirs:

"What Leaders are Doing" is one more
of the outstanding articles which so con-
sistently appear in HOUSE & HOME and
which have made it one of the nation's
top ranking publications.

We can think of no finer achievement
than to attain in the home building in-
dustry the position that your magazine
enjoys in its field.

ANDRES F. ODDSTAD, president
Oddstad Homes
Redwood City, Calif.

Straits of the Building Boom

Sirs:

Your May story about soaring land
prices in the Garden Grove sector of
Orange County, Calif., tells why thou-
sands of houses are going begging. The California daily press is strangely silent,
showing a tragic reluctance to tell its
readers the facts of life concerning the
dire straits of the building boom in many
suburbs.

Has H&H gone into the excessive and
abusive discounts on speculative short
term construction loans—usually six
months in California? The offenders are
not the banks, but "finance corporations"
and even building and loan associations,
which in many states are *supposed* to be
supervised like banks.

In northern California, hundreds of
such loans have had to be renewed be-
cause of excessive winter rains, plus the
worst spring market for homes in a de-
cade. The cost of such renewals is running
in some cases ten points, plus of course
6% interest plus title charges, lien bond,
etc. One Title Co. executive told me of
a speculative builder who needed \$200,000
and was asked \$100,000 bonus. He found
cheaper money—\$40,000 bonus.

Will the home building industry elimi-
nate such abuses or wait for action from
a Congressional committee?

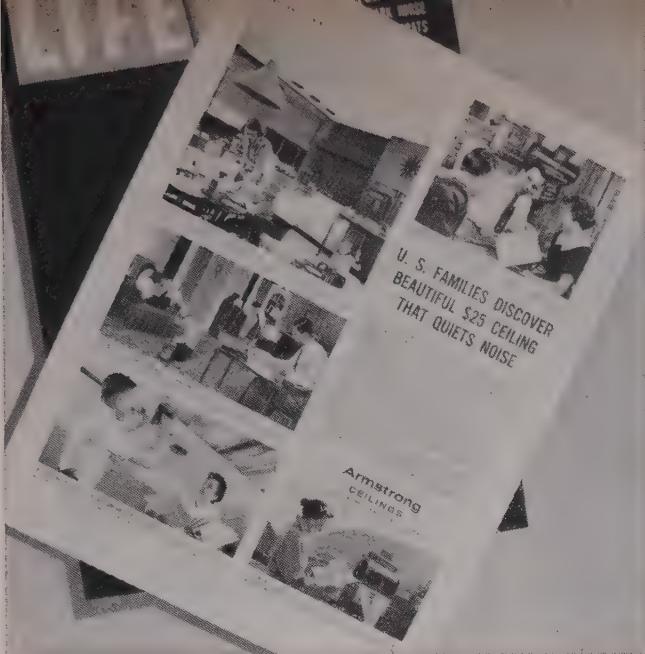
PAUL BRINDEL
Novato, Calif.

NEED IN OMAHA

Sirs:

The City of Omaha is in great need of
rehabilitation and redevelopment (July
NEWS), but any moves in that direction
were hamstrung by a vote-conscious city
council and a neighborhood conservation
board whose five members included two

continued on p. 106



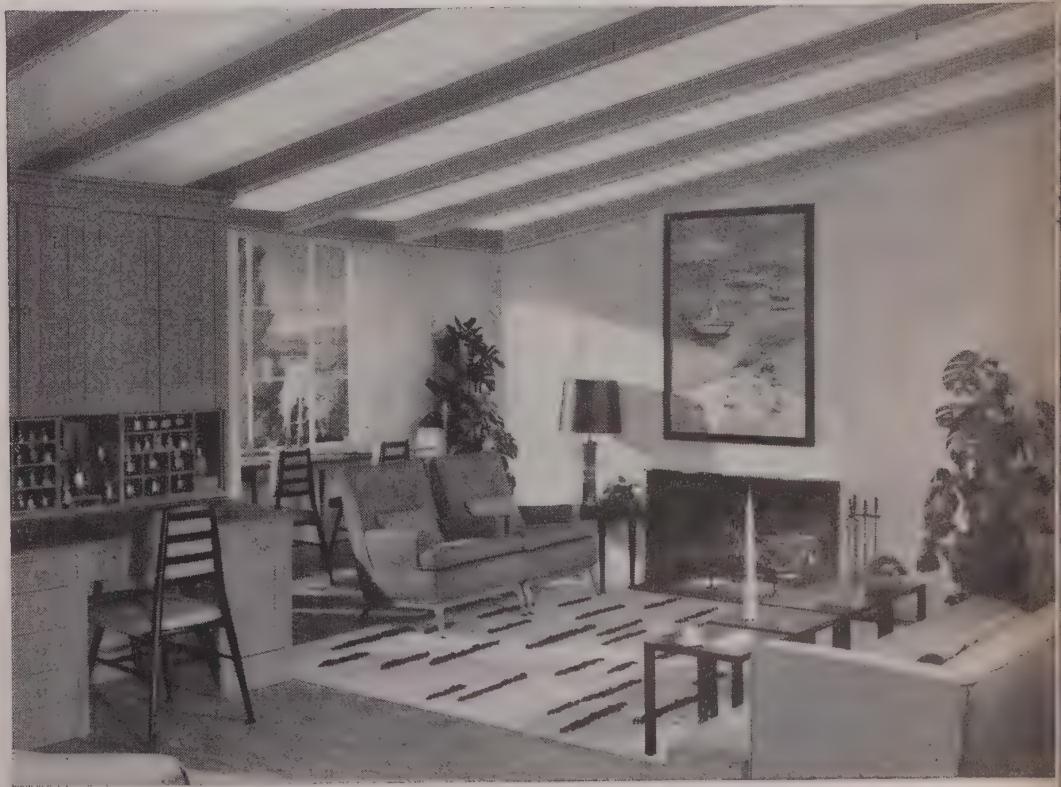
2. Now advertised in LIFE

With Cushiontone in your homes, you can feature the new noise-quieting ceiling that people in your town are seeing every month in Life. When they see Life-advertised Cushiontone in your homes, they'll be convinced that you're offering them a new extra in home comfort. Cushiontone is also advertised in American Home, Better Homes & Gardens, and Sunset magazine.



3. Helps put prospects in a buying mood

Whether you sound condition one room or several with Cushiontone, prospects will be impressed by the hushed atmosphere in your homes. A family room, with Cushiontone to muffle the racket of children and TV, appeals strongly to men. And women, who like a kitchen filled with appliances, like it even better when appliance noises are quieted by Cushiontone. For Cushiontone signs that tie in with the Life campaign, see your Armstrong dealer.



5. The smart look for your new homes

The moment Temlok Roof Deck is installed, an open beam ceiling is automatically created for the rooms below. This much-admired type of ceiling, usually associated only with high-priced homes, gives any home a feeling of greater spaciousness...a touch of luxurious warmth. And Temlok's smooth finish blends with both modern and traditional interiors. Its painted underside needs no further treatment and will never crack or warp.

For a free promotional kit on Temlok Roof Deck—and for your free Cushiontone signs and posters—see your Armstrong dealer or write Armstrong, 3509 Sixth Street, Lancaster, Pennsylvania.

Build your new homes with

Armstrong BUILDING MATERIALS

Temlok® Roof Deck • Temlok Sheathing • Temlok Tile • Cushiontone® Ceilings



Van-Packer Chimney blends with all homes. Note how the housing harmonizes with brick trim of home above.

Only Van-Packer Chimneys give permanence of masonry plus economy of pre-engineering

You can be sure of chimney safety and permanence—and enjoy the savings of a pre-built product—when you specify the Van-Packer Packaged Masonry Chimney for the homes you build. Van-Packer flue sections have $\frac{5}{8}$ " fire clay tile liner, 3" vermiculite concrete insulating wall, cement-asbestos jacket.

Completely packaged including flashing, the Van-Packer Chimney goes up in 3 hours or less and saves you 20-40% over brick.

Brick-panel housing adds beauty to all homes, assures buyer acceptance. Housing is now available in a choice of colors—red, buff or white—at no extra cost.

Ceiling or floor suspended Van-Packer saves space, lets you locate furnace anywhere. Van-Packer Chimney gives greatest draft for best furnace operation.

UL listed for all fuels, for all home heating plants and incinerators; approved by major building codes.

Immediate delivery to job from your local heating jobber or building material jobber. See "Chimneys—Prefabricated" in yellow pages of classified phone book, or write Van-Packer Corp. for Bulletin RS-1-19.



Van-Packer Corporation • Bettendorf, Iowa • Phone: Davenport 5-2621

officials of income property owners organizations and a city employee who was afraid to vote for fear he would jeopardize his job!

I was the first director of neighborhood conservation in Omaha and I resigned after eight months, disgusted with the situation and lack of cooperation. During that time the board couldn't even agree among themselves to hire an office girl to type my correspondence!

JERRY SAVIN
Harman Realty Co.
Omaha

SCRABBLE

Sirs:

Thank you for helping inflict my license plate game on the nation (June NEWS).

This madness, I'm sure, will swell the vacation casualty list no end and delight body and fender shops from the Florida Keys to the Columbia River.

However, I am compelled to point out that I am not sales manager for Oddstad Homes, but advertising and public relations manager. The sales manager is the very capable Ray Hammatt.

D. L. STOFLER
Redwood City, Calif.

PERTINENCE

Sirs:

The article on coordinated components (June issue) shows a wealth of background and study. These standards will be helpful throughout the industry.

The ratio of six "yes" answers to one "no" answer to the question: "Are coordinated components the on-site builder's answer to prefabrication?" was quite encouraging.

However, as our organization is one of those most vitally affected by the answers, may I point out that the one "no" answer by prefabricator George Price makes some pertinent points. The Lumber Dealers Research Council in its Lu-Re-Co activity is well aware of them. We are directing our efforts to cover them in our Lu-Re-Co component approach.

It is my own opinion that neither coordinated components nor prefabrication will be the one and only answer in the home building field. I might almost add "heaven forbid." Both these approaches will develop worthwhile answers. As both develop, competition will get keener and more pointed.

In the final analysis, all this should mean a product of greater value for the American public.

C. A. THOMPSON, chairman
Lumber Dealers Research Council

BOUQUETS

Sirs:

Editors more often get brick bats than bouquets. I wish to toss a bouquet.

The article, "Does a Community Pool Make Sense for You?" (July issue) is an extremely fine presentation of a subject that is rapidly growing in importance. It is excellently thought out and planned and presented in a down-to-earth manner that is bound to help builders and architects.

ROBERT M. HOFFMAN, publisher
Swimming Pool Age

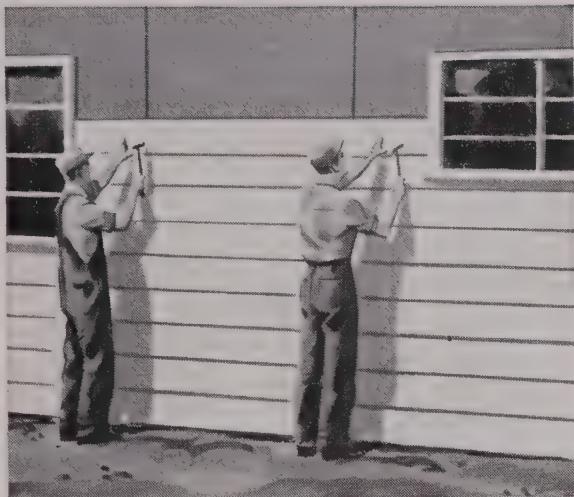
Sirs:

... A very nice article.

The pool has been a fine feature for this neighborhood.

J. C. TAYLOR, chairman
J. C. Nichols Co.
Kansas City
continued on p. 112

SAVE UP TO \$100 PER HOUSE



with

UPSON PRIMED SIDING



1. COSTS LESS TO BUY

Lowest price in the field. Up to 35% less than conventional wood siding. Get prices now.

2. COSTS LESS TO PAINT

Front side and edges of each piece uniformly primed at the factory with high efficiency resinous coating. Developed especially for this purpose by the Upson Chemical Corporation. Finish coat will not blister or peel. Back side has special *reflective aluminum* prime for extra moisture protection. Yet, both coatings allow board to "breathe." Has superior water resisting, wearing and painting qualities. You save up to \$50 per house on painting costs alone!

3. AND THERE'S LESS WASTE

Cut to uniform size: 12" wide by 12' long. No shorts. Won't split, check, crack or splinter. Gives you 10" exposure for modern appearance. Applied on the site in easy, conventional manner.

4. NEW BEAUTY FOR YOUR JOBS

Edges straight and true, edges with deep shadow lines, accent simplicity of modern design. Helps give house popular long, low look. Get a quotation on your next job. Write or mail coupon for name of your nearest dealer.

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94% wood fibers laminated for great strength

THE UPSON COMPANY • 839 Upson Point, Lockport, N. Y.

Please send me free details on beautiful Upson
Primed Siding, and name of nearest dealer.

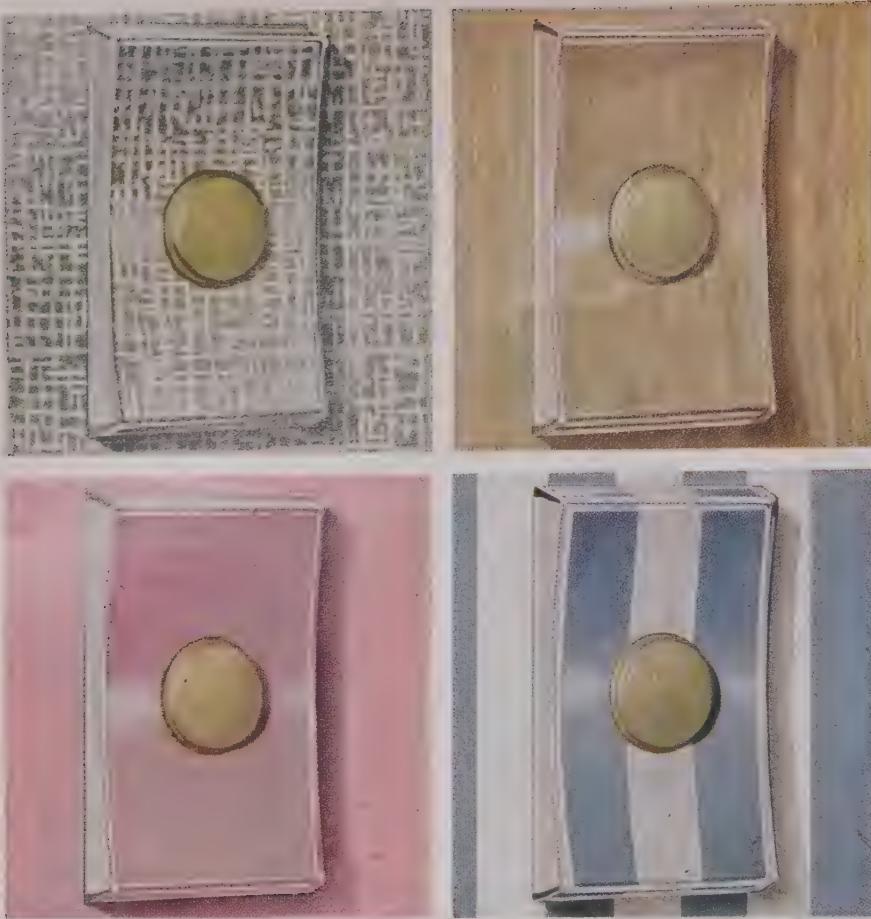
NAME _____

Title _____

Name of Firm _____

Street _____

City _____ State _____



Ever see a light switch like *this*?



Put the extra sell of Tap-Lite into
every room for as little as \$15 more per house!

Now—a decorator light switch that matches any wall in minutes! Snap-in wiring; installs easily. Line voltage. Tap—it's on! Tap—it's off! Talk it over with your electrician.

Tap-Lite by **Honeywell**



ROUND TABLE HANDBOOK?

Sirs:

The thought occurs to me that **HOUSE & HOME** should publish a handbook on the Round Table's suggested standards. This could be sold for a nominal price and I am sure it would be welcomed by architects, builders, etc.

I had no conception of the work your Round Tables are doing and the far reaching benefits that should accrue until I had the privilege of sitting in on one of them. While I am not a builder I am certain that many, many builders would like to have all of the recommended standards individualized, condensed and available in a handbook.

D. A. MILLIGAN,
Vice president, sales,
American Tractor Corp.,
Churubusco, Ind.

Sirs:

... After reading a recent Round Table report, I dug out back issues and spent half the night reading other Round Table reports. I have read nothing that more vividly presents the challenge of a wonderful future in the home building industry for those who will open their eyes and minds, as your January editorial urged.

I have decided to cut out the pages of each issue pertaining to the Round Table reports and make them into a special folder.

Perhaps many other "open minded" members of the home building industry might like the same thing. What about printing a pamphlet that would consolidate the recommendations of the Round Table panels?

R. H. STRIEBY
Strieby Lumber Co.
Kansas City

POINT OF INTEREST

Sirs:

It might be a point of interest to know that builders in the Portland area are becoming more and more merchandising conscious. I believe they are realizing how beneficial model homes are to the sale of houses ... We thoroughly appreciate your coverage of articles of interest to the home building industry. Congratulations.

ROBERT L. KING
Executive secretary
Portland Home Builders Assn.
Portland

CORRECTION

Sirs:

There are a couple of points in the school story (June, News) that need to be corrected.

The square footage of one of our classrooms is given as 32 x 32'. This does not include the 8' hall, which is part of the basic unit and is figured into the \$18,000 per-classroom cost.

Instead of dividing the \$18,000 cost figure by 1,024 sq. ft. (which you did to reach your figure of \$17.50), it should be divided by 1,280 sq. ft., reducing the cost to about \$14.

ALLEN DIBBLE
Director of public relations
National Homes Corp.
Lafayette, Ind.

House & Home

September 1956

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STORY OF THE MONTH

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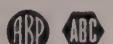
Washington: The 1956 Housing Act—the story the newspapers missed
Housing Market: Higher priced houses are the bright spot
Air conditioning: What will FHA do about it?
Mortgage Market—Materials and Prices—What the Leaders are doing
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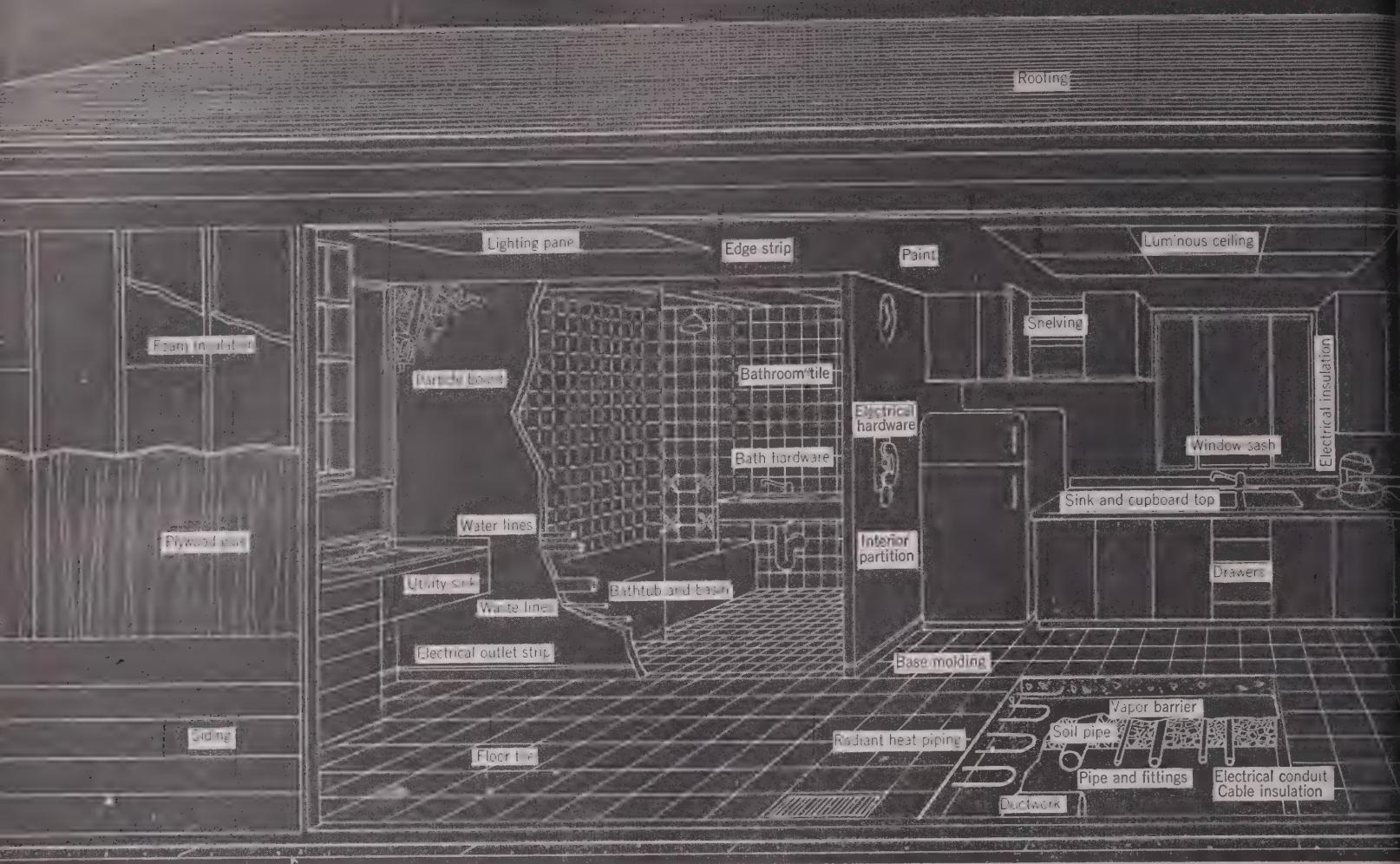
DEPARTMENTS

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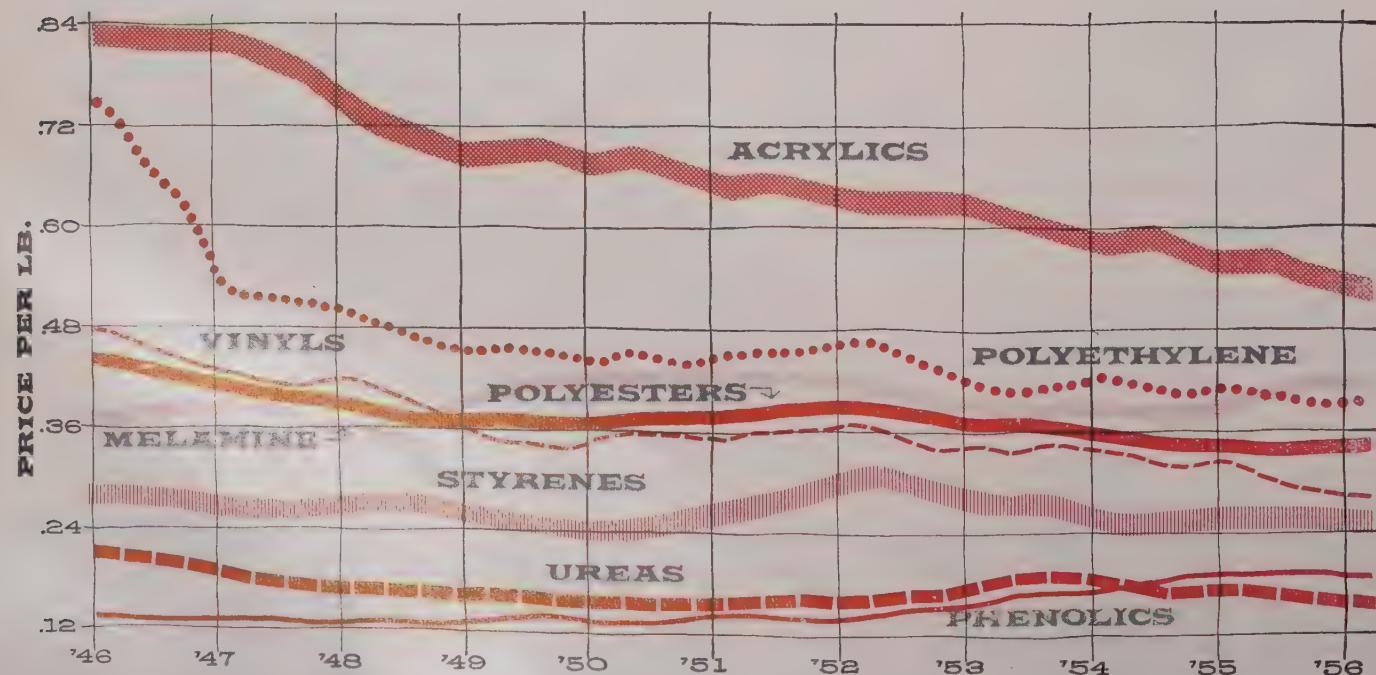
Cover: Monsanto's "House of Tomorrow" designed by MIT's Marvin Goody and Richard Hamilton. Photo: Bernard Spring





Look how many ways you can now use...

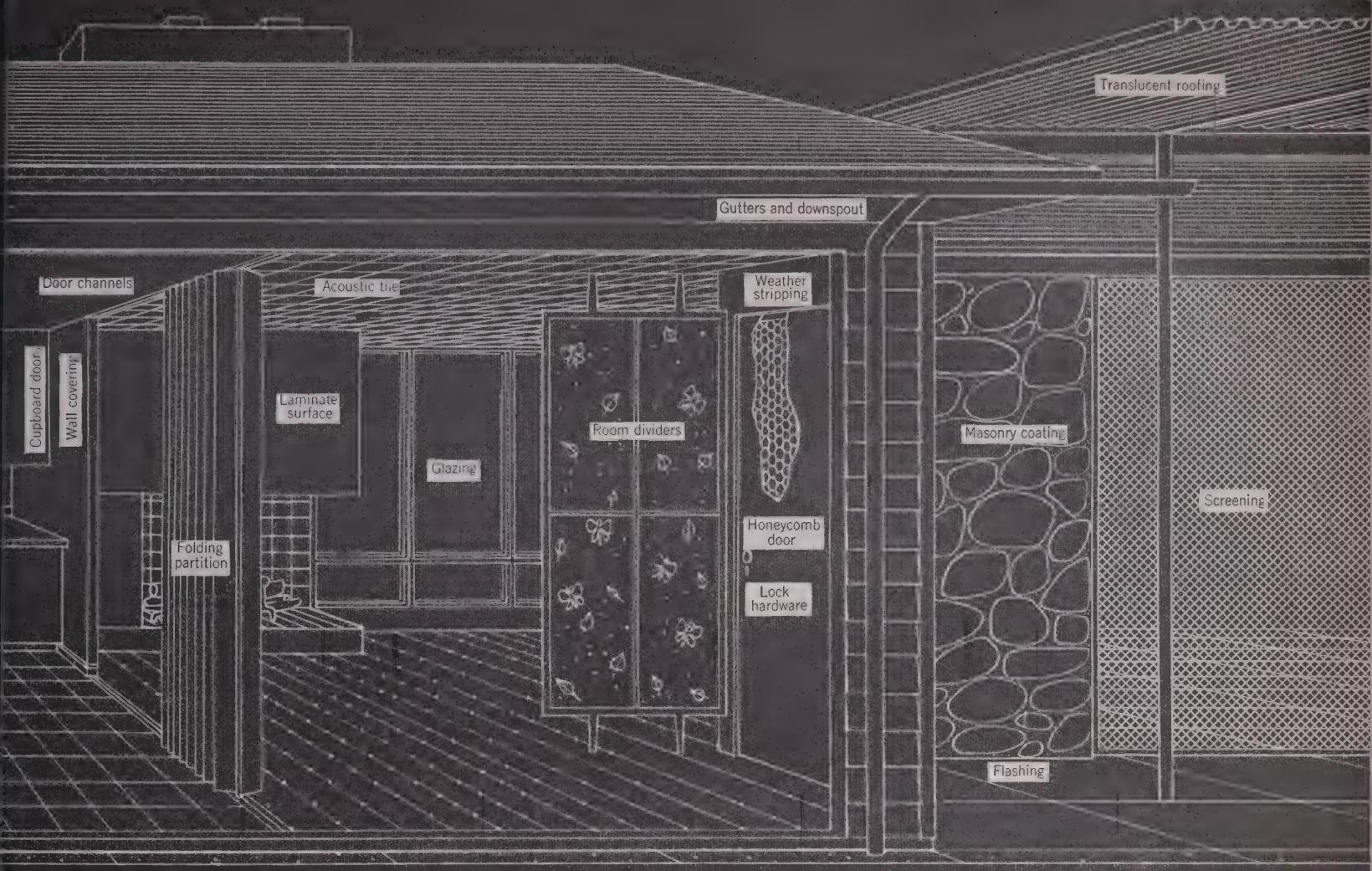
Look how plastic prices are coming down!



Plastics are getting cheaper so fast you will soon use them a lot more

Plastics are the only home building material whose price is lower today than in 1946—and remember all plastics

are so light a pound goes a long way. For many uses their installed cost is now less than any other material.



PLASTICS!

• Plastics have already found a big and growing market for some 50 uses in today's house.

And almost every day brings out a new plastic or a new way to use a plastic.

Pricewise, plastics are getting more and more competitive. Metal and wood prices keep going higher, but plastic prices can only come down.

There are 12 major plastics you can use (see pages 123-129), and dozens of minor ones. They are all made from much the same elements (see next page), but the end products vary widely.

Some are as strong as steel; others are easy to break. Some will stand high temperatures; others get soft at 120° F. Some are waterproof; others can't take dampness for very long.

Each offers a different value to home building. You should know what they can and cannot do be-

fore you use them in your house of tomorrow.

Plastics are bound to change house design in many ways, for they can seldom be used in the same way or form as wood or steel. They are economical only if the design takes advantage of their special qualities as plastics. (See pages 130-134).

They can be formed in any size and any shape. Their light weight is ideal for prefabrication. They can incorporate finish and structure in one piece. For example, one structural plastic panel, made up of two or three plastics, can replace the eight layers of an outside wall.

While metals, masonry, wood, ceramics and glass will always be ingrained in home building, plastics open up undreamed of new possibilities for better houses at less cost. And a lot of things are going to happen faster than you might suppose. For a forecast, see page 122.

Plastics are not always plastic . . .

There is more confusion over the word "plastic" than over almost any other word in the English language, because:

Plastics are not necessarily plastic.

According to Webster, plastic means "like plaster," but plaster is not a plastic. Plastic means pliable, pliant, ductile and malleable, but most plastics are nothing of the kind at ordinary temperatures. And nearly half of them (the so-called thermosets), once set, can never again be made plastic, pliant, pliable, ductile or malleable at any temperature.

The confusion is somewhat like the confusion about salt and salts. Salt is sodium chloride; salts can be almost any stable chemical compound formed by the reaction of an acid with a base.

Plastic vs. plastics

The plastics industry defines plastics, not in terms of plasticity, but in terms of chemical complexity. All the plastics produced and sold by the plastics industry are very complex *polymers*. A polymer is a very large molecule built up of long and complicated atomic chains, linking and cross-linking the atoms of a few common elements—usually carbon, hydrogen, oxygen, nitrogen and chlorine.

The difference between plastics as different as an acrylic and a phenolic is not that they include different elements. They don't . . . the difference is that the same elements are combined in a different proportion and linked in a different order. The result is that an acrylic is a thermoplastic (it can be remelted) and phenolic is a thermoset (it can't).

Plastics are a special magic

From the world of retorts and beakers in the chemist's laboratory has sprung a family of materials whose diversity is fantastic.

Plastics can be hard or soft, opaque or transparent, rigid or resilient, fireproof or inflammable. They can be almost anything you want. The business of the plastics manufacturer is really a business of arranging groups of atoms into desired new products.

Plastics are the result of man playing at being *mother nature*. They are more truly man-made than any other materials we use. Processes very like those found in the sun's rays, the earth's pressures and the waters of the world are used by man to make plastics. The huge chemical plants that turn out tons of plastics every year are simply mechanical simulations of nature's forces.

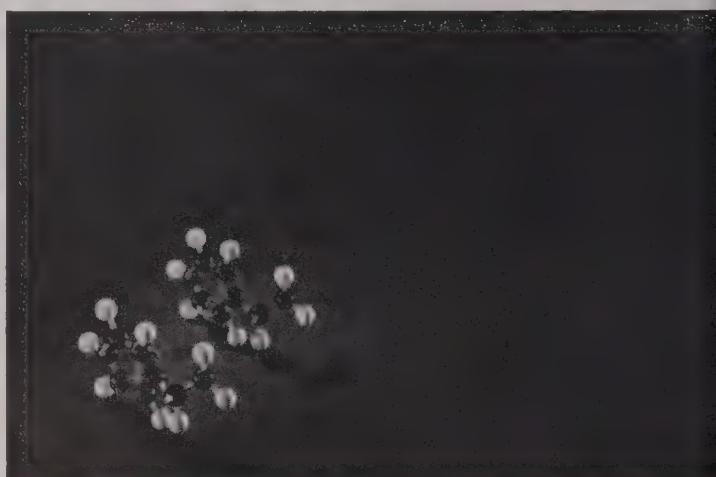
...but all plastics have

they are all made of very cheap



Plastics are mostly oxygen and nitrogen, common as air . . .

their atoms are linked and cross



Models show how carbon (black balls) and hydrogen (white) combine to make styrene. The two small molecules (left) are called

they are made by very complex



these things in common:

and common elements (all costing much less than 1c a lb.) . . .



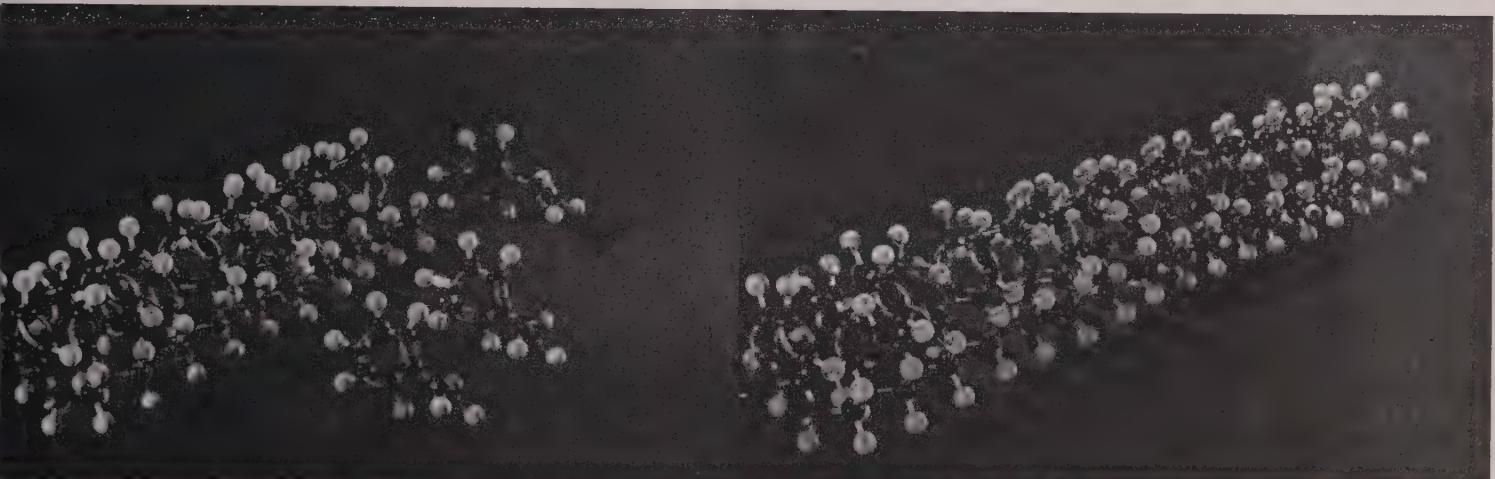
hydrogen and chlorine—common as water and salt . . .



and carbon, common as coal or oil

LIFE (l. to r.): C. E. Steinheimer; Farbman; Crane

linked in very complex molecules called polymers . . .



styrene monomers, a liquid chemical from which this thermoplastic is made. Under catalytic action, the monomers start forming a

chain (middle picture) and the liquid becomes viscous. When the chain-like polymer of styrene is complete (right) the plastic is rigid.

Models courtesy General Electric

processes in very big and expensive plants . . .



Celanese Chemical Plant; E. M. Payne

The top 12 plastics are as different from each other as they are from wood

They range in price per pound from 15¢ (ureas) up to \$1.50 (nylons). They vary in strength from strong as steel (polyester with glass fibers) to soft as down (flexible urethane foams).

Vinyl and acrylic look alike in their pure stage, but one is better for floors than for ceilings; the other is better for ceilings than for floors. Some, like melamine, are almost scratchproof; some scratch very easily. Some are shatterproof, like acrylic; some are quite brittle, like phenolic.

But scientists are constantly learning new ways to make each of the 12 better and new ways to use them better in combination (like polyester reinforced with glass, or phenolic and paper scratchproofed with melamine).

On the next seven pages you will find a brief report of each plastic and how it is used now. But not all of these applications are commercially practical yet.

Here is a timetable of how fast plastics may find wide commercial acceptance and use in homebuilding

1956 Interior surfaces, floor and wall tile, skylights, translucent roofing, insulation, indoor paints, electrical devices
On the market for a long time, these form the base for plastics in home building.

1957 Pipes, hardware, light fixtures, luminous ceilings
Wider acceptance and better products will appear in these lines just now breaking into home building.

1958 Partition panels—standardized, movable, with integral finish
Now used in commercial buildings, panels may go into homes, especially prefabricated, two years from now.

1959 Whole walls (nonload bearing), plumbing fixtures, roof panels
The plastic wall and roof panel will be a unit embodying interior and exterior finish.

1960 Complete windows; prewired, prefinished, insulated, ceiling panels

1961 Complete bath assemblies with pipes and fixtures molded in wall
The molded bathroom with plastic piping will come in two pieces that nest together for shipment.

1962 Complete mechanical cores that can be traded-in like autos
Structural plastics will make it possible to assemble primarily metal equipment in one unit.

1963 Full floor units incorporating ducts and wiring
Finish floor on top, finish ceiling on bottom will be strong enough for heavy use on 4' centers.

1964 Unitized kitchens whose components can be traded in
Floor to ceiling cabinet and equipment units 24" and 36" wide. (Range and oven will be metal.)

1965 Whole house in packaged room units

1966 Plastics will make possible solar heat and power in many regions
Collecting mats of plastic for storing sun's energy mechanically or electrically will come on the market.

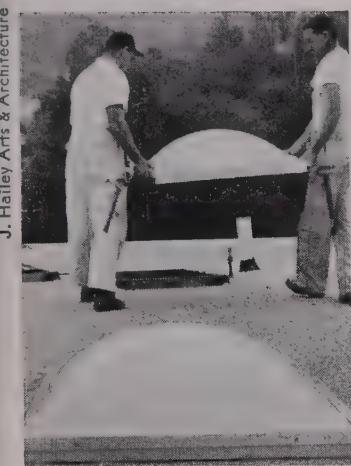
1967 Stabilized soil housing. Roofing held by inflated plastic tubes
Vacation housing, temporary and military housing will be made of plastic and earth mixed at site.

1968 Plastic domes to cover the total living unit, including gardens
Under domes people may live in controlled climates with "outdoor" living all year round.

ACRYLICS

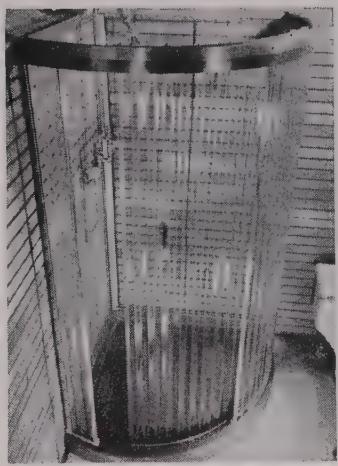
are weatherproof, shatterproof, transparent and colorful
They are good for skylights, bathrooms, roofing, decorative dividers

But they scratch easily and cannot take loads. Today's price—55¢.



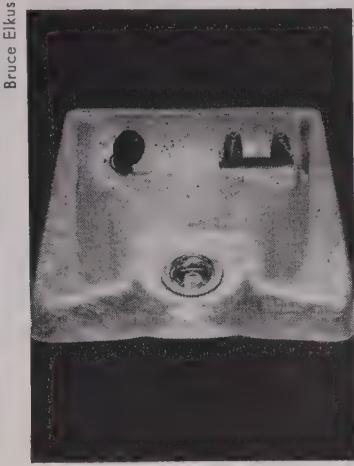
skylights

Under such well-known trade names as Wascolite, Plexiglas and Lucite, acrylic is better than glass for skylights because it will not shatter and is easy to mold. It is impervious to sunlight and weather, lasts longer than any material except glass.



shower stalls

Acrylic is unaffected by normal hot water temperatures, and the strong, fairly rigid plastic is resistant to sharp blows. The plastic has a slow burning rate and will not flash ignite. Lightweight sheets like this are easily handled and installed.



wash basins

A basin like this (now used in plush beauty parlors) weighs only 10 lbs. vs. 50 lbs. for china. It is easy to mold, easy to color, chemically resistant, but it will not command a wide market until it can be surfaced with scratchproof plastic.



room dividers

Handsome acrylic panels can be laminated with leaves, butterflies, or fabrics to make room dividers and daylighting panels. Another possible use: acrylic can be sprayed on roofs to get gay sun-reflecting colors bonded to the surface below.

STYRENES

are cheap, light, hard, colorful and waterproof
As a foam the plastic is a stable, good, easily handled insulation

But they cannot take sunlight and usually they are brittle. Today's price—25¢.



bathroom tiles

Styrene's biggest role in home-building is in colorful wall tiles. Tiles are dimensionally stable and waterproof, but the plastic is not stable in sunlight, must be used indoors. Styrene is also cheap for cold water pipe, fittings and household hardware.



insulation

Blocks of styrene foam are excellent insulation—K factor 0.25. It costs more than Rockwool, but it does double duty as a vapor barrier, can be plastered and is laid up with bricks or concrete block. It is good foundation insulation around slab.



blocks

In Houston, materials dealer Dean Emerson laid up styrene blocks with waterproof adhesive and formed the house walls by guniting each side of 3" block with 1" of concrete (H&H Nov. '55, p. 75). The foam does not absorb water or moisture.



ceiling

Architect Daniel Toshach, of Saginaw, used foamed styrene panels, faced on both sides with reinforced plastic sheets, as one-piece roof-ceiling units, from exterior finish to interior finish. Two-lb. per cu. ft. density makes roof lightweight, easy to build.

VINYLS, plastics' most versatile family, are strong and tough

They are good for floors, walls, pipe, fittings and hardware

But, like most plastics, 212°F. is usually too hot for them. Today's price—30¢

Bakelite



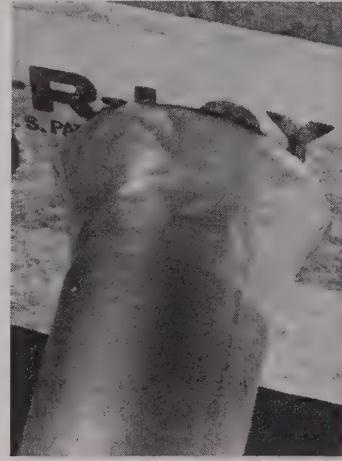
Alexandre Georges



B. F. Goodrich



Coleman



wall coverings

Vinyl wall tiles and sheets (used like wallpaper) will last as long as the house. Available in all colors and with inlays of many textures, they can be cleaned with soap and water and are extremely resistant to normal household damage. But it is not cheap.

screening

In this Florida house architect Rufus Nims used vinyl screening over his combination porch-patio. Made of vinyl coated glass fibers, it is tough and weatherproof. It will outlast any metal screening, and is competitive with aluminum and copper screening.

piping

Vinyl piping, generally polyvinyl chloride or PVC, is rigid, chemically resistant, long lasting, good for cold water and sewage lines but not hot water. Connections can be threaded or made quickly with a solvent. Installed cost is between cast iron and copper.

duct covering

Vinyl sheeting is a good protective coating, used here for ducts. Vinyl is also an excellent wire insulator, can be formed into roofing, siding and window sash. Other uses include gutters, downspouts, luminous ceilings, louvers, blinds and hardware.

Monsanto



floor tiles

Floor tiles and sheets are now vinyl's biggest market in houses. They will outwear any other resilient floor covering. They are

best for the heavy use flooring gets in kitchens. Vinyl has excellent water resistance, can be used safely on slabs on ground.

Vinyl is a plastic jack-of-all-trades

Basic vinyl can be combined with a great variety of other organic compounds to produce materials ranging from very resilient flooring to quite rigid waste lines. In its natural form it is as clear as acrylic and can be used for daylighting. But in most forms, with fillers added, it is opaque. Glass and asbestos fillers make it tougher.

Vinyls can be used for moisture barriers, wall insulation, sprayed roofing, blinds, hardware, plumbing and lighting fixtures. The biggest member of the plastics family, production of its seven major types totaled 350,000 tons in 1955 (aluminum 1,550,000 tons).

Vinyls resist abrasion

All vinyls stand up very well under the abrasion of normal use, and there are special types made with very high wear resistance. While they are all tough and strong, only flexible vinyl can be bent back and forth without weakening and tearing. They are unaffected by prolonged contact with water, oils, food, common chemicals and most cleaning fluids. Certain types of vinyl are self-extinguishing. They must all be kept from the softening effects of direct heat.

Rigid vinyls have a big future

In translucent ceilings, pipes and fittings, siding, sheets, cupboard doors and drawers, rigid vinyl is making a strong bid for a share of the market, now partly held by acrylics, polyesters and phenolics.

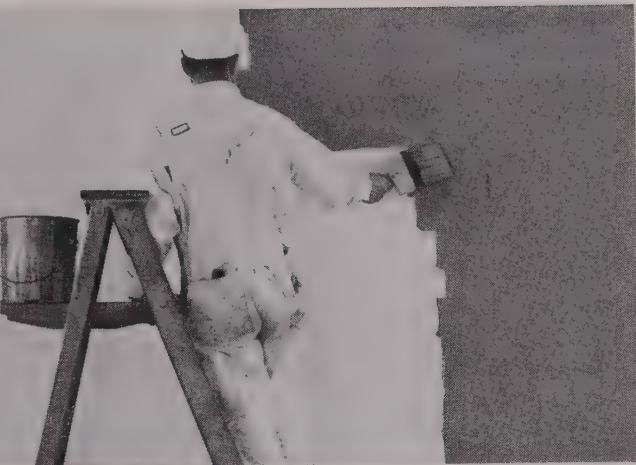
Rigid vinyls, or polyvinyl chloride, have tensile strengths up to 7,000 and 8,000 lbs. per sq. in. at room temperature. Increases in temperature reduce the tensile strength of these rigid plastics so at boiling point they usually become soft, but age increases their tensile strength.

ALKYDS

dry fast, have higher heat and electrical resistance

They are good in interior paints and some wiring devices

But alkyd paints won't weather and alkyd devices cost more. Today's price—35¢.



painting

New interior paints called alkyd flats produce a more durable finish with better washability, better color and gloss retention. They brush easily, dry fast to form a flexible film. They can be applied to plaster before it is completely dry. They are almost odorless if used with low-odor mineral spirits. They can be baked for factory finishes.

wiring devices

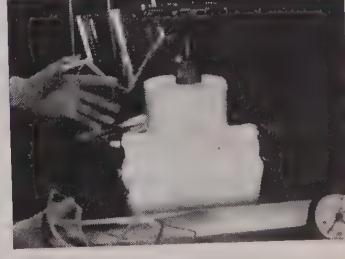
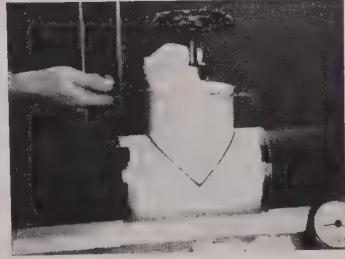
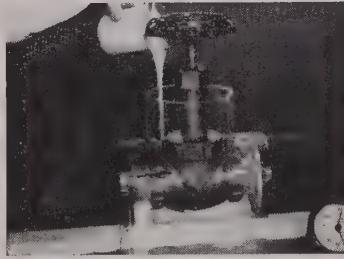
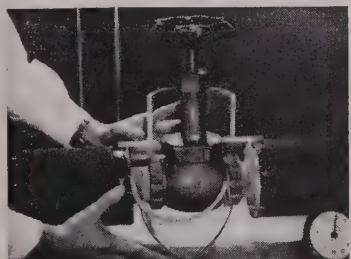
In electrical devices, alkyd molding compounds offer better insulation and arc resistance than any plastic except the more expensive ureas and phenolics found in expensive silicones. But alkyds cost more than the commonly used most electrical hardware. Alkyds are used mostly around fuses and circuit breakers where space is tight and arc resistance important.

URETHANE

pours as a liquid, foams better on the job than any other plastic

The foam makes a fine barrier against heat, noise and vapor

But it can't be used by amateurs and the price is still in doubt



Here is a test demonstration on how to insulate a valve with urethane foam

1. Place a plastic mold (usually polyethylene) around the valve. Liquid urethane is then mixed with a catalyst in a beaker.

2. Mixture, beginning to foam, is poured into mold where it immediately starts to rise. It forms a fast bond with almost anything.

3. When foaming stops, urethane hardens, loses its stickiness. Excess is cut off with a knife when the foam is completely dry.

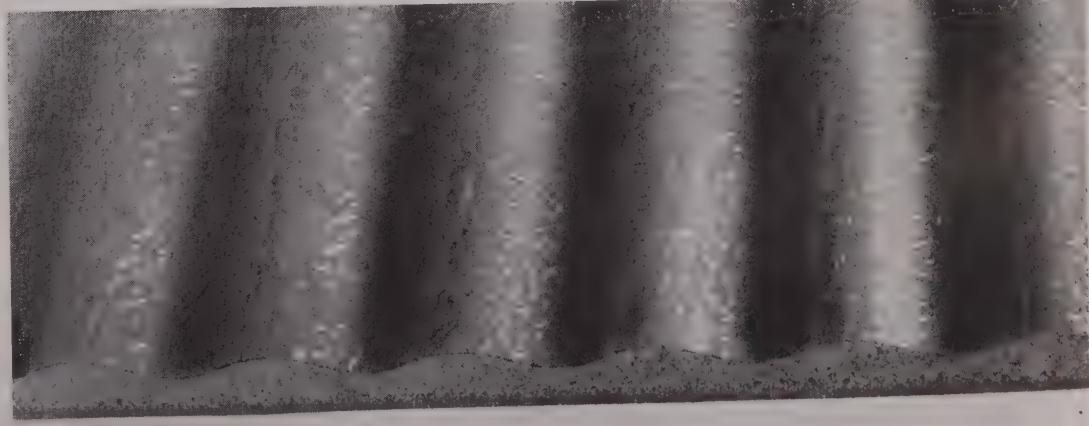
4. Take the mold off and job is done. Foam is fine for insulating hard-to-fit shapes, like this valve, and hard-to-get-at places.

foam core

Urethane foam between polyester sheet (on top) and plywood (beneath) makes a good sandwich panel in this test specimen. Its *K* factor is .27 and it can cut sound transmission by 90%. It weathers well. By varying foam formula and density (from 2 to 25 lbs. per cu. ft.) it can be made rigid or flexible and strong enough to support the roof.

Urethane surfaces weather as well as acrylic or silicone.

These new foams can be made in a number of chemical formulations. Recent developments promise a competitive position for the foam in the near future.



Du Pont

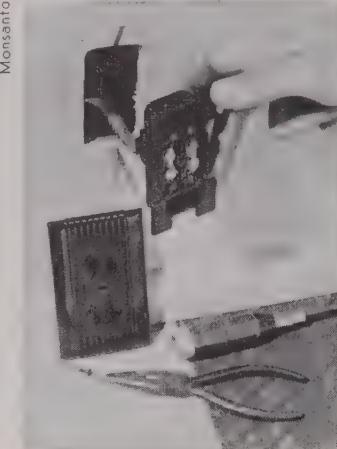
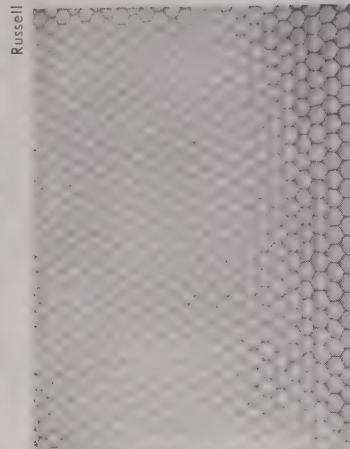
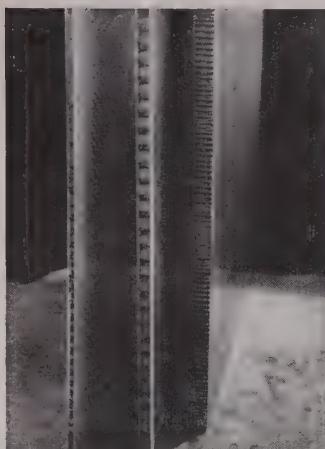
Bruce Elkus

PHENOLICS

are cheap, strong and heat resistant up to 400° F.

They are good electric insulators, chemical and water resistant

But they are usually dark. They can't stand prolonged exposure. Today's price—20¢.



paper and phenolic

Phenol impregnation under heat is what makes paper honeycomb strong enough for doors and structural walls. Such wall panels have already found a market in commercial buildings. Honeycomb cores are surfaced with reinforced polyester sheets.

honeycomb

Most paper honeycombs are made in hexagonal shapes. Air spaces make an effective thermal insulator, especially if the cells are small. For exterior use the panels must be sealed to prevent moisture from getting at the paper honeycomb.

hardware

Phenolics are best known as electrical hardware in homebuilding. Easy to mold and dimensionally stable, phenolics won't support combustion and are shock resistant. They are also used in laminate sheets and can be foamed for insulation.

plywood

Phenolic adhesives are used for exterior grade plywood. They are waterproof and are not hurt by occasional wetting. They increase the strength of wood and decrease its swelling due to moisture. In homebuilding phenolics' biggest application is in plywood.

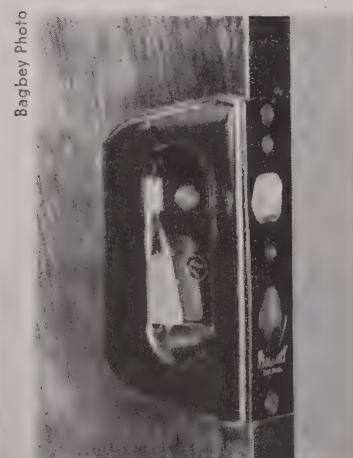
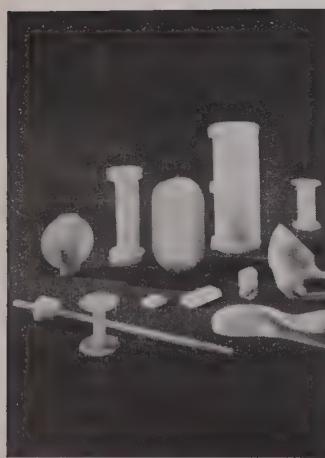
NYLONS

are very strong, tough, amazingly resistant to abrasion

They are easy to mold into complex, dimensionally stable shapes

But they are expensive and limited to small parts. Today's price—\$1.50.

Du Pont



parts

Nylon for small mechanical parts wears longer than any other material known. Its flex-life (bending back and forth) can be almost timeless. The material is light, water-, corrosion- and heat-resistant, frictionless and self extinguishing.

hardware

Like the lock mechanism above, hardware made of nylon is fast becoming cheaper than machined brass. For instance, a washing machine's hot water mixing valve can be injection molded in nylon for 50¢—the same part in brass: \$2.50.

doorlock

Set in the door this nylon lock, also in picture at left, will last longer than almost anything else in the house. Nylon is rapidly becoming competitive with many machined metal parts because it can be fast and accurately injection molded.

hinge bearings

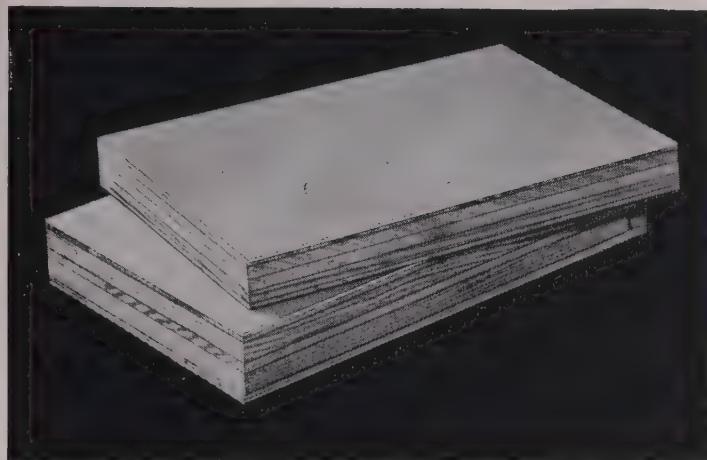
Heavy duty door hinges are often made with nylon bearings to prevent wearing out the bronze, brass or steel. Tensile strength can be as high as 11,000 lbs. per sq. in. and nylon can withstand steam sterilization without deforming.

UREAS

are strong and colorful, good for light hardware

They make excellent adhesives and are unaffected by common chemicals

But they cannot take 212° F. nor continued exposure. Today's price—16¢.



plywood

The better grades of interior plywood (including almost all hardwood plywood) are bonded with urea to get better fire and water resistance. It is not as good for exterior plywood as phenolic adhesive. Available as liquid or powder, urea adhesives

come with a variety of hardeners for curing at temperatures ranging from 70° F. to 270° F.

Urea adhesives can be fortified with melamine to resist boiling water. They can be used on the site for fastening drywall to studs and gussets to trusses.

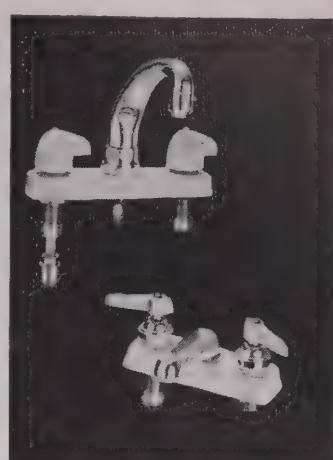
Bruce Elikus



particle board

Particle board is almost always bonded with urea. The board is made of a fine wood chip core surfaced with larger chips. Light colored urea is almost invisible in the attractive particle board above, but forms a very effective bond between chips.

American Cyanamid



hardware

Hardware made of urea (actual name: urea formaldehyde) is tough, scratch resistant and very colorful. It can be exposed to hot water for short periods without softening. Molded pieces have tensile strengths up to 7,000 lbs. per sq. in.

Du Pont

MELAMINES

are colorful, very hard, perform well from -70° F. to almost 400° F.

They are best for scratchproof, waterproof, acidproof flat surfaces

But they are hard to form cheaply and they can't stand continued sunlight outdoors Today's price—42¢.



Consoweld



American Cyanamid



laminate sheet

Melamine is used only in laminations with cheaper materials, for its one big advantage is it makes the most indestructible surface of any but the highest-priced plastics. Above is 4 x 8 panel of phenol-impregnated paper surfaced with melamine.

countertops

Known by such names as Tex-tolite, Micarta, Consoweld, Formica and Panylite, melamine finds its biggest home application in counter tops.

It offers unlimited color possibilities, it is self-extinguishing; it has good impact resistance and

can be chipped only by being hit hard with a sharp tool.

Indoors it will last as long as the house. Outdoors it cannot stand continued sun.

A thermosetting material, melamine can take a great variety of filler for varying properties.

resistant

Melamine surfaces are resistant to all normal household chemicals. Water absorption is low, even under immersion. Maximum use temperature 350-400° F. It would make a fine surface for plastic plumbing fixtures if it could be formed deeply.

POLYETHYLENE

is flexible, waterproof, resists chemicals and fungi
It is tough, good for cold water pipes, best for vapor and moisture barriers

But it should only be used where its flexibility is desirable. Today's price—40¢.

Dow Chemical Co.



Paul S. Davis



Triangle Conduit and Cable



moisture barrier

Polyethylene barriers under slabs or crawl space will last the life of the house unless rotted by the sun. Ideal for building, it is not easily punctured. In the photo above, showing slab being poured over polyethylene film, note foamed styrene insulation in foundation walls. The plastic remains flexible and tough even in arctic temperatures. Rodents and termites can chew through it, but in usual installations this is no problem.

vapor barrier

Fastened to inside face of studs, polyethylene makes an excellent vapor barrier in walls.

For mechanical uses polyethylene can be turned into an almost new material by irradiation (Architectural Forum, Sept. 1954, p. 102). Atomic rays give the plastic heat resistance up to 700°F. and greatly increased tensile strength and stiffness. This technique may permit added uses for this plastic in houses.

pipe

Polyethylene pipe is the cheapest pipe to use for cold water lines, mains and laterals. It is already extensively used in farm areas and industry. Flexible and lightweight it can be run through walls and trenches like wiring, bending around corners with no joints. When impregnated with carbon black it will stand direct sunlight. High modulus (i.e. very strong) polyethylene pipe can be used at temperatures approaching boiling.

SILICONES

are water repellent, very resistant to weather, chemicals
They are stable up to 700°F. and are excellent electric insulators

But their current cost limits them to weatherproofing. Today's price—\$1.50.

General Electric



waterproofing

Silicone water repellants are sprayed on masonry to extend its useful life by minimizing the spalling, cracking and crazing effects of thawing and freezing.

Silicones are also used in small

parts and laminates to give flexural strengths up to 50,000 lbs. per sq. in. They are the best flexible insulation for electricity (but expensive). They are heat resistant up to 700°F. and can be foamed for insulating.

exposure test

In this freeze-and-thaw test, top block, silicone treated, was exposed to 90 cycles; center block, oil treated, 38 cycles; and bottom block, not treated at all, scaled badly after 40 cycles of freezing and thawing.

POLYESTERS

are transparent to opaque, very tough, weather- and waterproof with reinforcing they are easily and cheaply formed into pieces as big as 500 sq. ft.

But while they are very strong, they are not a simple substitute for structural members. Today's price—35¢.

Bruce Elkus



polyester panel

Sheets of polyester reinforced with glass fibers can be bonded to a great variety of core materials to make sandwiches of great strength using skin tension.

Above, the plastic is bonded to a grid of aluminum extrusions to form a complete vapor-proof, wall panel, from interior finish to exterior finish. The chemically resistant panel is cleaned with soap and water.

Keller Products



walls

This factory wall in Manchester, N. H., is made of the translucent panel shown at left. The air pockets formed by the aluminum extrusions provide thermal insulation.

Structural panels of polyester can be made to withstand temperatures up to 400°F. and their fire rating can be better than red oak and flame resistant impregnated plywood.

Julius Shulman



translucent panels

Homebuilding's biggest use of polyester is in the translucent, glass fiber reinforced corrugated sheets used for patio walls and roofs. Tensile strengths of the reinforced polyesters can be as high as 50,000 lbs. per sq. in. While their strength is comparable to steel, structural uses of the plastic must be designed with large safety factors, because of creep in the plastic.

Bassons Industries



bathtubs

Plastic plumbing fixtures like the bathtub above, are easily formed of reinforced polyester. These lightweight fixtures can be installed by just one man. They withstand boiling temperatures.

While they have a superior surface hardness, they should not be scoured with abrasives. Like acrylic plumbing fixtures their wide use must wait for a scratch-proof surfacing.

Jay Maisel



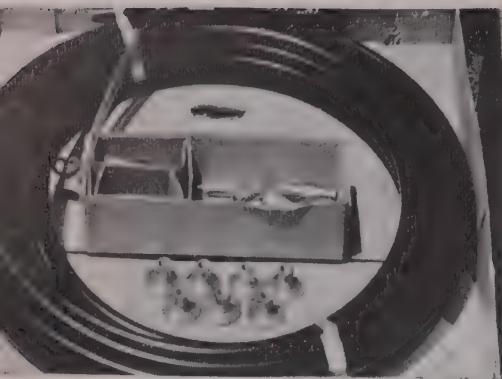
polyester dome

In big domes of plastic, made famous by architect Buckminster Fuller, reinforced polyesters have made their most dramatic impact on the building industry.

As in this Fuller dome built by Lunn Laminates of Long Island, the 363 reinforced polyester sections serve both as enclosure and structure. Flanges formed by the turned-in edges of each molded plastic section are the primary structural members. Secondary structural members are the plane surfaces of the sections themselves.

Designed as a military shelter, the lightweight dome (only 6 tons) spans 55' and towers four stories high. It can withstand wind velocities up to 200 mph and endure very severe weathering.

Reinforced polyesters will very likely be the workhorse of tomorrow's house. They can be formed into shapes from moldable resins by almost anyone with a shop. No heat, no pressure, just simple formwork is all that is required to work with them.



This do-it-yourself polyethylene sprinkler system for 1,400 sq. ft. of lawn lists at \$40 or half metal's cost.



Connections for plastic pipe can be made simply with a solvent "weld". No threading vise or dies are needed.



Nylon fittings like these, injection molded, never wear out, cost less than brass for most complex parts.

Bakelite Co.

Eastman Chemical Products

DuPont

PLASTIC PIPE, a natural for cold water, may start the next big plumbing code fight

Plastic pipe is already being used where sanitary codes cannot stop its use. For example, railroad train builders use it for plumbing in their newest and finest cars. Factories use it where non-corrosion is important.

Farmers use miles of it in irrigation and water lines. Oil companies use it to lay nine miles of 4" pipe line in five days. Homeowners use it for do-it-yourself underground lawn irrigation systems.

At least one million separately owned potable water installations in the U. S. now use plastic pipe. Its use has expanded from \$500,000 in 1948 to \$45,000,000 in 1955.

But plastic plumbing is so new even the new national plumbing code does not approve it. The only states that now recognize plastic pipe in water supply systems are Maine and California.

For waste lines and cold water lines the only criticisms of plastic pipe are 1) rats can gnaw through it even easier than they can know through copper. 2) Unless properly supported it may sag in vertical runs or under a heavy head of water. 3) Plumbers are not yet

familiar with its use. 4) Drainage fittings, like traps, are not yet on the market. 5) Hot water might possibly get into the cold water pipes if the system is not properly installed.

Advantages the pipe offers are 1) it costs less than any pipe except carbon steel. 2) Fittings are easier, and therefore cheaper, to mold. 3) It is flexible, snakes around corners as easily as wiring cable. 4) Joints are made simply with a solvent; no threading is needed (see photo.)

For hot water, plastic claims less advantages, because high-priced nylon is the only tough and flexible plastic at the moment that will not soften at water temperatures close to boiling. The cheaper heat-resistant plastics like polyvinyl chloride are ordinarily too stiff to take corners without joints.

The one sure thing is that before long some manufacturer will find an inexpensive way to lick the problem. One interesting possibility: polyethylene irradiated with atomic rays. It loses some of its flexibility in the reactor, but can then stand temperatures up to 700° F. Another possibility—polyethylene reinforced with a nylon or Orlon sleeve. DuPont is testing this right now.

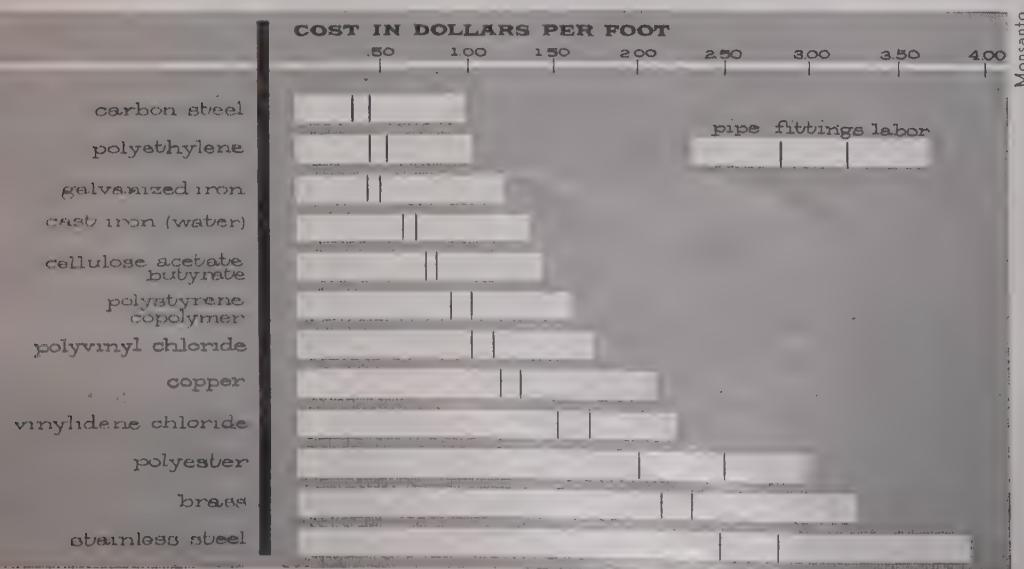
Installed costs

Monsanto claims (see chart) that the installed cost of polyethylene pipe, including pipe, labor and fittings, is less than any other type except carbon steel. It's 50% cheaper than copper, almost 70% less than brass.

The chart at left is based on using 100' of 2" pipe in 20' sections, three 90° ells, one 45° ell, two tees and two couplings.

Actually the flexible polyethylene pipe would need no ells at all, but for comparative purposes in the chart only the 45° ell was dropped.

Polyethylene or styrene pipe can also be used in radiant heated slabs: if it softens under boiling temperatures, it is held in place by concrete. Best way to install radiant plastic pipe: tie it to mesh with string and fill with water before concreting.





Lawrence L. Williams

This is the all-plastic toilet in the newest lightweight railroad cars

The Budd Co.

Molded in one piece, walls, ceiling, basin, radiator and toilet enclosure are made of fireproof glass fiber re-

inforced polyester. Basin and toilet bowl are made of the same plastic and fastened to the shell. Plastic

plumbing pipes are connected at the factory. Bathroom is placed in car with minimum of connections.

BATHROOMS with plastic walls, plastic fixtures and plastic pipe might cut today's \$30-a-sq. ft. bathroom cost in half

prefab

Panelized bathroom designed by Guy Rothenstein, is to be made of reinforced polyester and shipped in a relatively small, lightweight package of 12 pieces—tub, 3 tubs panels, door panel, vanity panel, lavatory panel, 2 more walls panels, floor and ceiling panels and toilet. (This prototype is porcelainized metal.)

Bathroom can be supported on rough floor or joists and does not need support from enclosing wall framing. Surrounding walls can be built before or after installation of the bathroom. Wall panel joints are finished with special filler strips to make them flush.

Installation follows a progression: floor unit is set, then tub and tub panels; the rest of the wall units are placed, ceiling goes in last.

Fiat Metal Mfg.

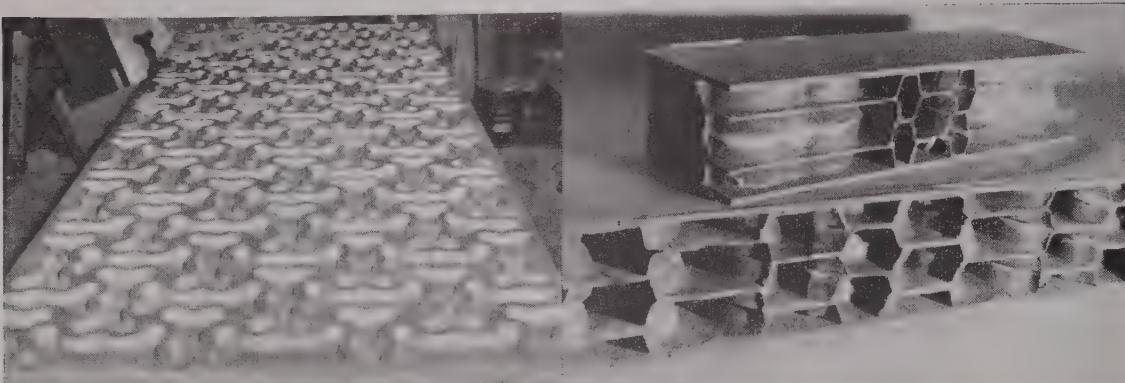


PANELS

—plastic sandwiches for floors and walls

can be fireproof, structural, insulating, easy to move

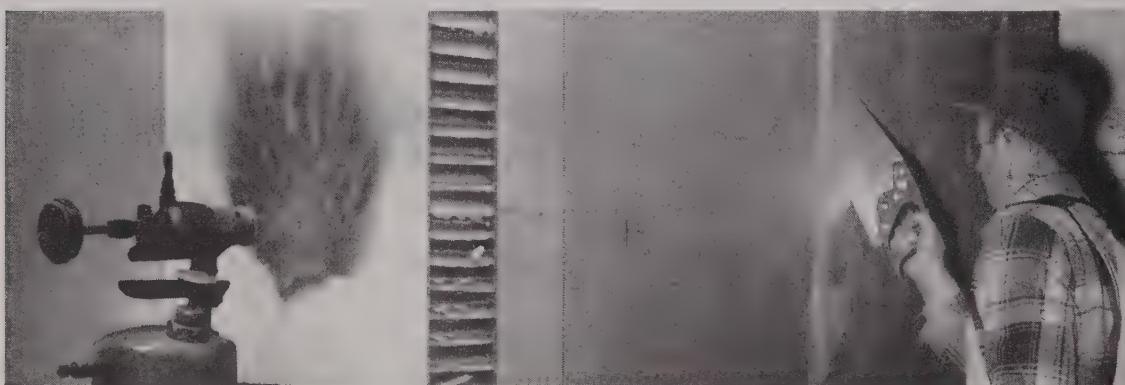
W. B. Wilkins



phenolic-and-paper floor panel

This is American Houses test floor. Strong enough to span 8' x 8', the 4" thick panel weighs less than 4 lbs. per sq ft. "Dog-bone" corrugations let it do double duty as a warm air plenum. A more expensive panel on the same pattern used polyester and glass

fiber. Reinforcing plastics with glass or paper makes them many times stronger. Core is bonded to Masonite facing with epoxy (best but costliest plastic adhesive). Other good plastic adhesives—melamine (expensive), phenolic, urea (cheapest). All are stronger and last longer than protein glues, but urea needs melamine mixed in for waterproofing.

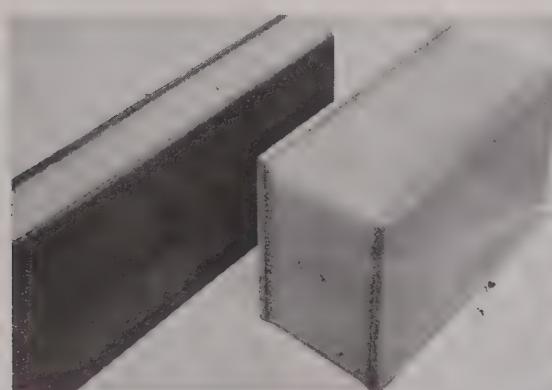


fireproofed with a vinyl film

This five-layer sandwich has a phenolic and paper honeycomb core, Masonite facing on both sides and vinyl surfaces. Sizes are 4'x8', -10', -12', -16'.

Panel could replace the eight layers of an outside wall—siding, vapor barrier, sheathing, insulation, studs, drywall, spackling and painting.

Bruce Elkus



insulating sandwich panel

Panels are moisture and verminproof, won't warp and have a K factor of 0.25. Such a panel can replace everything in the outside wall but structural members.

Cores of foamed styrene insulation are faced with wood veneer for interior surfaces and asbestos with reinforced polyester for exterior, span 4' in roofs.



easy to saw for openings

Whole panels are set in place to make complete shell, and then windows, doors and slots for conduits, outlets and plumbing lines can be cut in place.

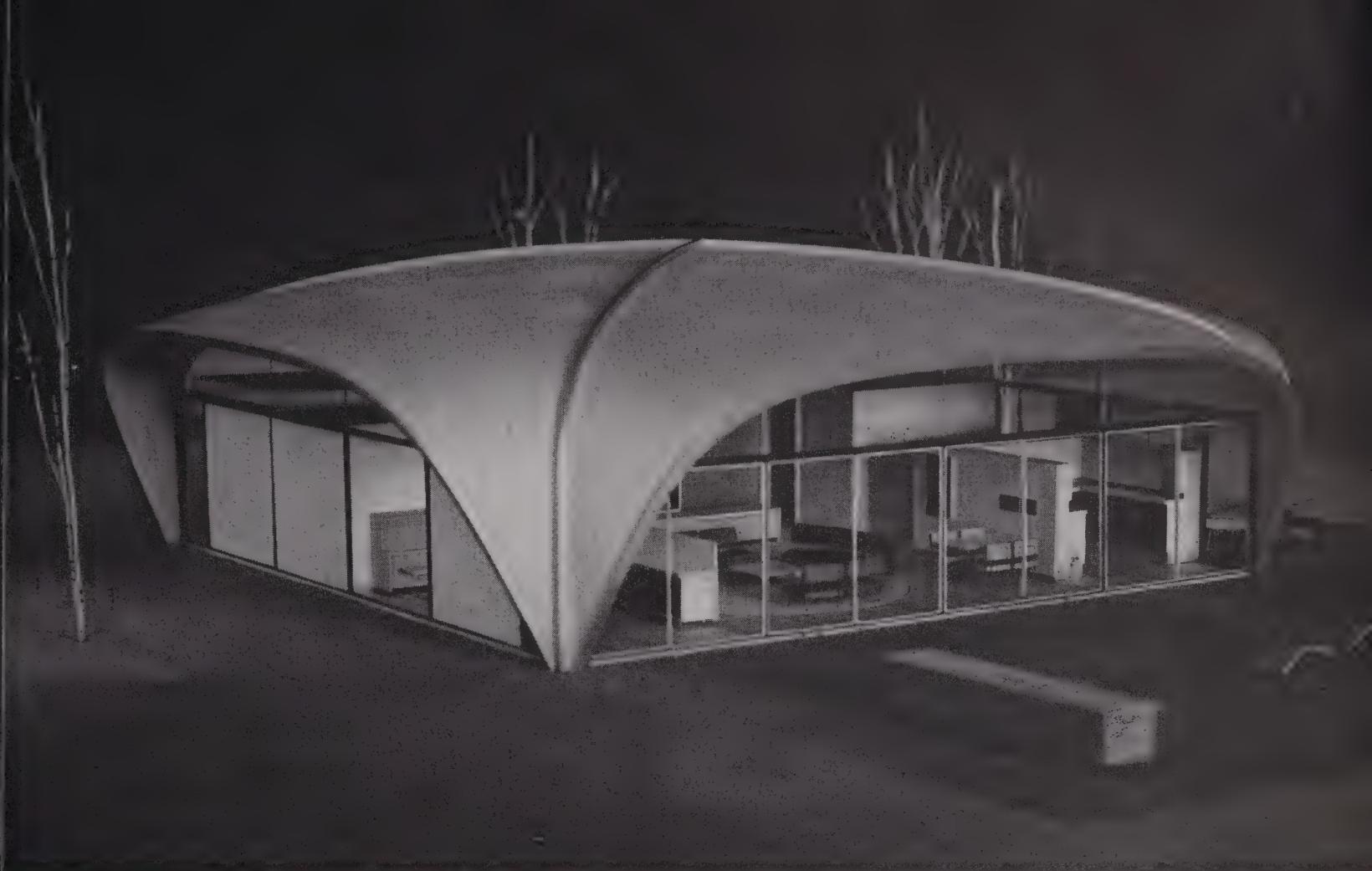
The 4" thick sandwich is used for floors, walls, roofs, and on-edge for beams. Designed by W. R. Chance Associates for Stirling Construction, Arlington, Va.



Carl Koch's acorn house

Panels are phenolic paper honeycomb faced with plywood and hinged at the factory in a package which unfolds at the site to make a complete house.

Basic package is 8' x 9' x 23' long, folds out to make almost 800 sq ft of house. Erection time is only 32 man-hours, plus 20 man-hours site preparation.



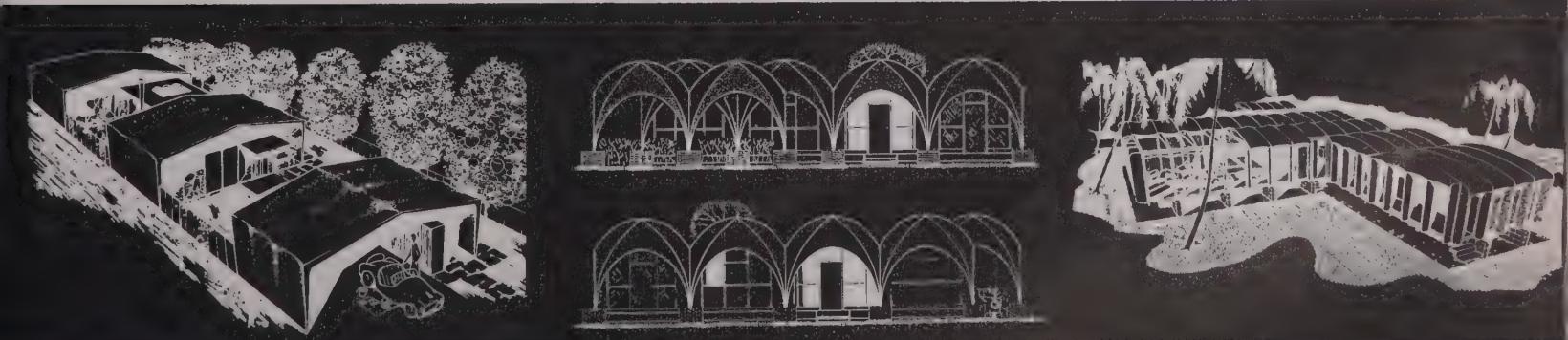
Eliot Noyes

Curving form makes this plastic roof many times stronger

Model shows how four preformed plastic panels can be put together to make a thin shell roof. Panels would have a foamed plastic insulating core faced

with reinforced polyester sheets. Open plan house has 1,700 sq ft and was designed by architect Eliot Noyes for a General Electric research project.

PLASTICS used as plastics will change the look of houses
Here is a new challenge to the architect of today and tomorrow



1st prize house, by William Goodwin, MIT, is made of three 34' span, reinforced polyester bents.

Series of four-piece domes, nested for shipping, form roof and structure for house by Allen Dworsky.

Plastic roof and insulation is suspended between plywood templates on plastic frame. J. Miller, MIT.

These designs, here and on the next page, are part of a competition sponsored by the Society of the Plastics Industry and show how young architects think plastic houses may look

This is the Monsanto House

Architects Marvin Goody and Richard Hamilton designed it for almost 100% use of plastics.

Plastic roof and floor sections (sandwiches of reinforced polyester and foamed urethane or styrene insulation) can be stacked (see front cover), plastic foundation (see drawing opposite), plastic wall panels (phenolic paper honeycomb faced with polyester), plastic windows (acrylic in vinyl, styrene or polyester frames), plastic ducts (vinyl or urethane), even plastic columns (reinforced polyester) will be used.

Because plastics bend fairly easily without losing their strength, the lightweight, cantilevered structure is overdesigned to get rigidity. If it were just strong enough for its loads, the house would bend and deflect uncomfortably.

It will be built next year in Disneyland, Anaheim, Calif.

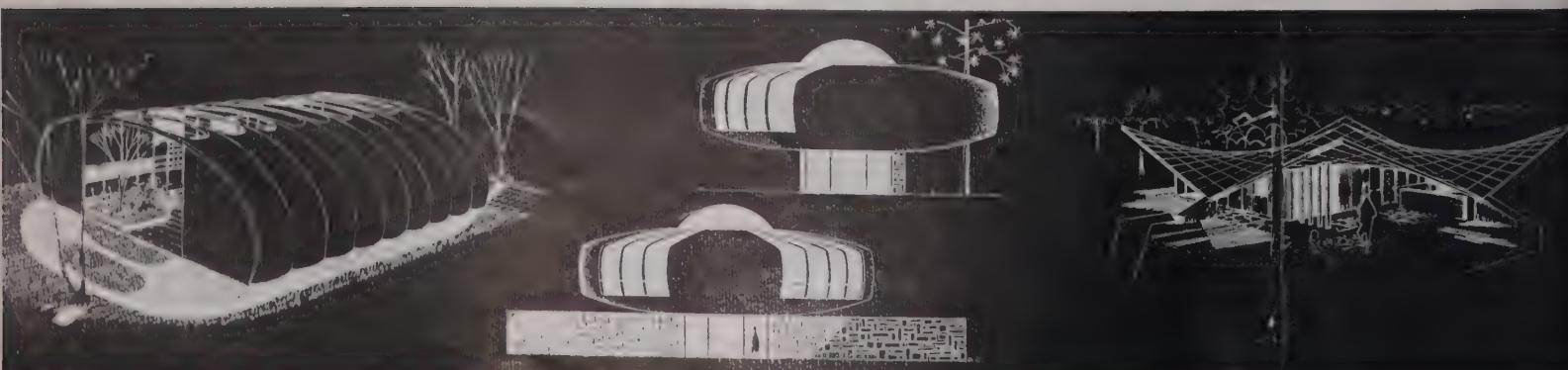
HOUSES of plastic will have many more colors and curves

Use more standard components, need special jointing

Plastics can be economical only if they are used as plastics, in forms and sizes suited to plastics. They will bring curves back into architecture—partly because they, unlike other materials, are so easy to mold, partly because their easily molded arches are stronger and more economical than beams.

They will be more colorful. Some of their colors will be bright and translucent. Others will be dark—for only acrylics, and some special vinyls and polyesters can stand sunlight, unless ultraviolet rays are screened out with aluminum or carbon black pigments.

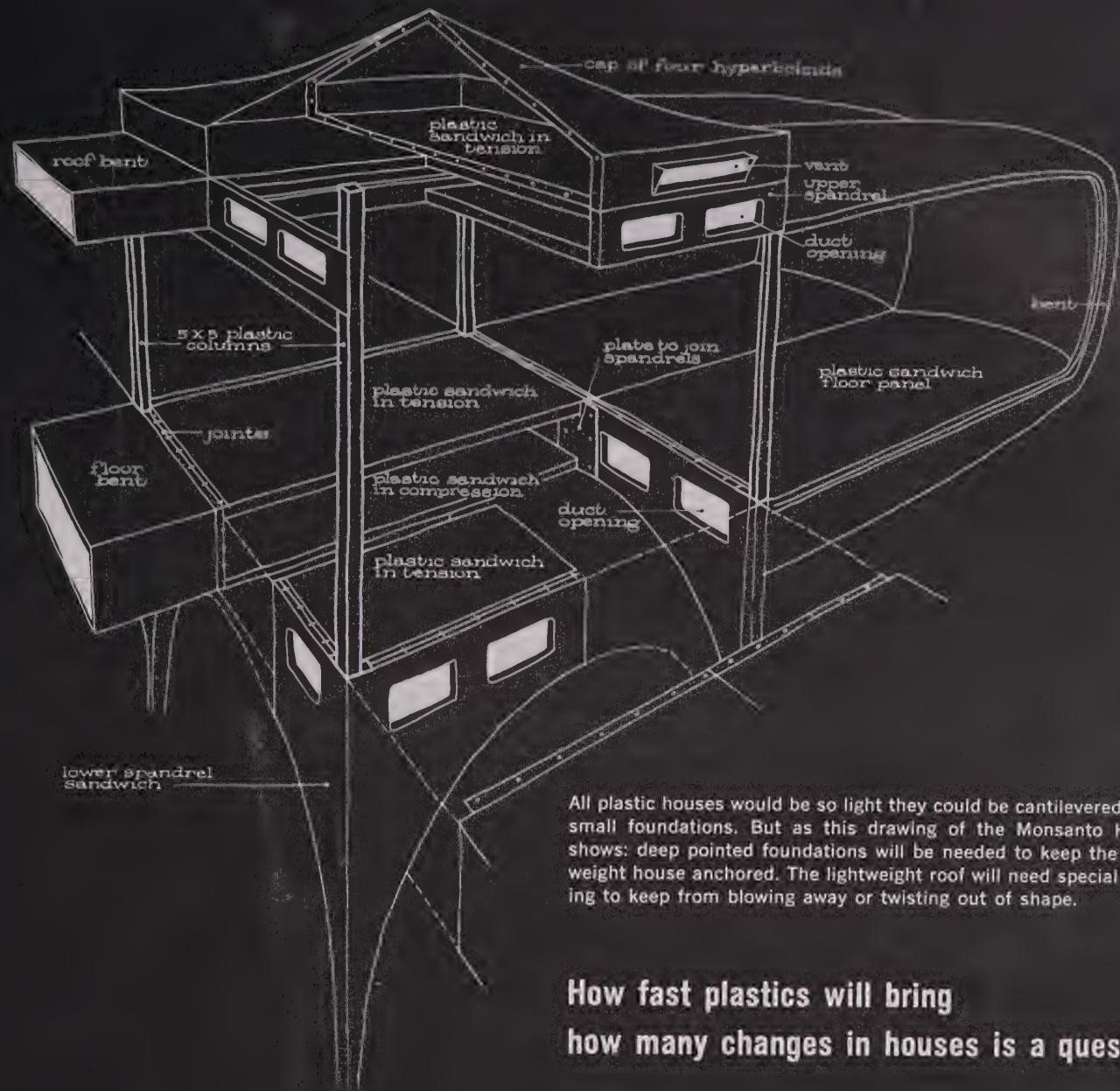
They will speed up dimensional standardization, for most plastic parts must be sized at the factory where they are molded. They need special jointing systems, for changing temperatures make them expand and contract more than any other building materials.



Series of arches with acrylic skylights at top form outside walls and roof of this house designed by Fuhs Tijan, MIT.

Plastic skin on molded reinforced plastic ribs with acrylic dome at center form round house designed by Eric Bodticer, MIT.

Honeycomb core, reinforced plastic hyperboloids make sweeping roof lines in this house designed by John Napier, MIT.



All plastic houses would be so light they could be cantilevered from small foundations. But as this drawing of the Monsanto House shows: deep pointed foundations will be needed to keep the lightweight house anchored. The lightweight roof will need special jointing to keep from blowing away or twisting out of shape.

How fast plastics will bring how many changes in houses is a question

But this much is sure:

a very important new factor is entering the design and construction of houses.

Plastics will not replace wood and stone and steel,

but as plastics are integrated with these other materials
the home building industry will learn to offer better homes at lower costs.



This all plastic roof is supported by inflated tubular arches—the air holds them up. Model design for skating rink is by Sherry Proctor, Cambridge, Mass.

This Buckminster Fuller geodesic dome has a roof of plastic panels set on a wooden frame. Inflated plastic triangles might work as well. Design by Jeffrey Lindsey.



Ezra Stoller

This rich and rhythmic house expresses





32 simple and basic design ideas

This is the Zimmerman house in Manchester, N. H., built on a one-acre lot in 1951. It was designed for a doctor and his wife, whose children have grown up and moved away. It is a cold-country house, farthest east of all Wright's houses.

At first glance, it belongs to Wright's prairie period, but it reflects the continuing evolution of the architect's thought, with many features not found in his early work—like the inside kitchen; the asymmetrical roof pitch; and the large sheets of glass (instead of his earlier mosaic of small panes to break up the reflection on the glass).

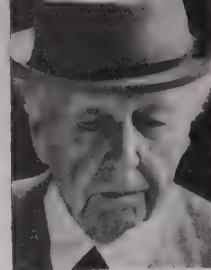
As you can see, this house is a lot more than the sum of its ideas, but each idea is worth remembering.

of Frank Lloyd Wright

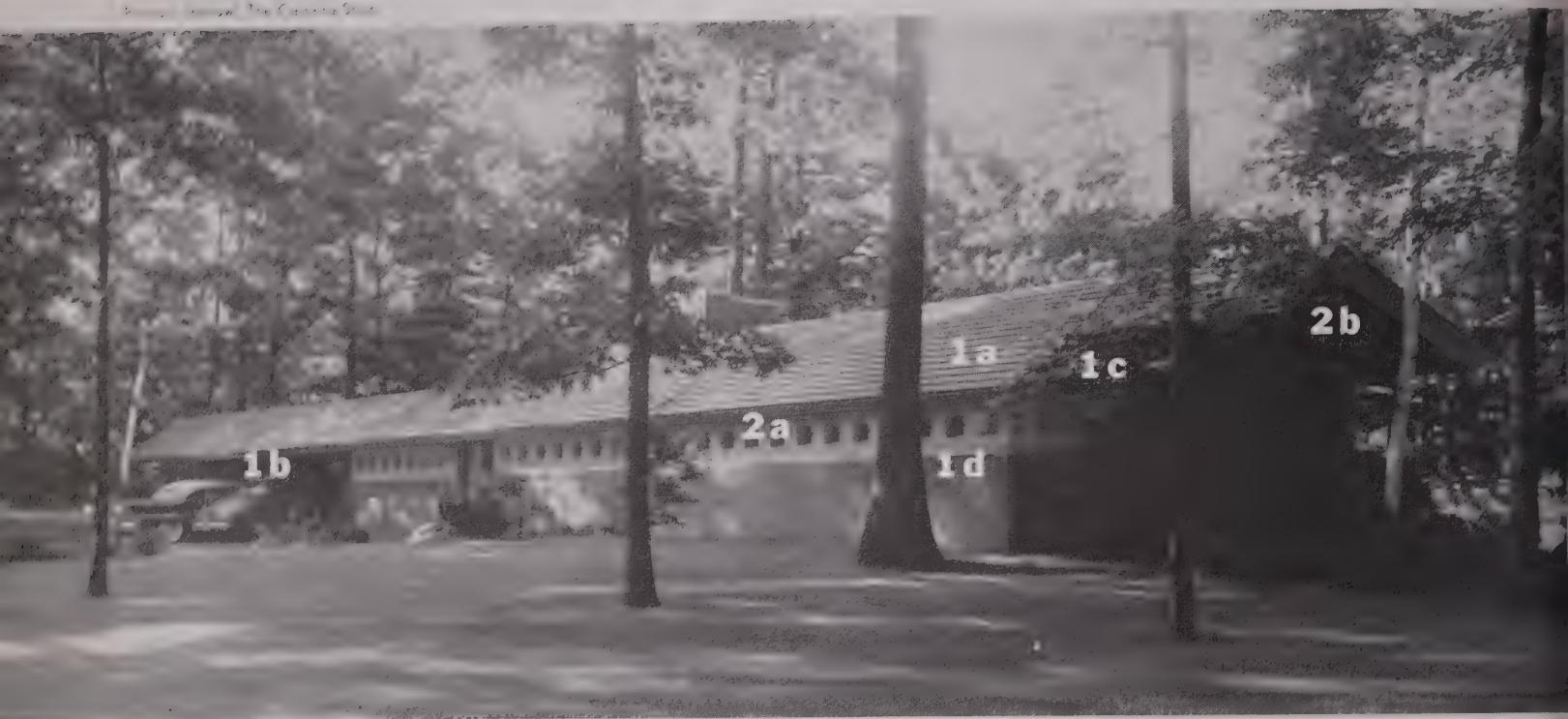


LIFE—Alfred Eisenstaedt

To make a small house look **bigger—outside**



LIFE: A. Eisenstaedt



1 Stress the horizontals.

(a) Stretch the roof line.

This 1,587 sq. ft. house has a 2,917 sq. ft. tile roof.

(b) Keep the fascia in one straight line, except for a good reason.

The little bite at the near corner (c) is needed to let light reach the gable end window (see 10).

(d) Define a strong middle line.

Wright used a horizontal strip of white concrete block to carry your eye along the house length.

3 Keep the roof line low.

The plate line here is 6'9". People are so used to higher walls they will assume the 6'9" is really 8' or more so the building must be longer.

4 Don't build a whole wall, and punch holes in it for your windows.

Build your wall only to sill height, then rest your windows in structural courses above it.

2 (a) Don't waste a big overhang on the north, and (b) don't feel you must use the same roof pitch on both sides.

On the south, the big overhang needed a low pitch, but the living room inside needed a high ceiling. Solution: a one to four pitch on the south; a three to five pitch on the north.



5 Scale an entrance to its wall. Don't put a dinky, too-small doorway in a big surface.

6 Don't stick a toy chimney in a big expanse of roof or it will look like an afterthought.

To make a small house look **bigger—inside**



7 Dramatize a high ceiling by emphasizing a below-standard "ceiling" line to fool the eye.

8 Use a dropped ceiling in the hall to make the living room ceiling seem higher by contrast.



11 Plan built-ins around the walls to free center space, and make a narrow room work like a wider one.



9 Make the room seem wider by placing an important design element—like these brick window columns—at right angles to the room.

10 Use a glass gable without an overhang to let the sun play changing patterns on the ceiling.

12 Break up the open plan by letting it flow around corners, so you can't see all the dining area from the living room or all the open kitchen from the dining room.

13 Make the terrace seem a part of the living room. For example: (a) Carry your planting through the glass. (b) Carry your floor line through the wall. (c) Use ceiling high glass to let people see your ceiling run right past the wall. (d) Continue the ceiling pattern out onto the overhang.

14 Miter the glass in corner windows to make the corner disappear.



To make a small house work better—outside



The Camera Shop



18 Raise the planting boxes so the gardener won't have to bend; provide hose bibs in each box.

19 Make the terrace big enough to serve as an outdoor room, or it becomes merely a path.

20 Raise the terrace slightly to get good drainage and make lawn maintenance easier.

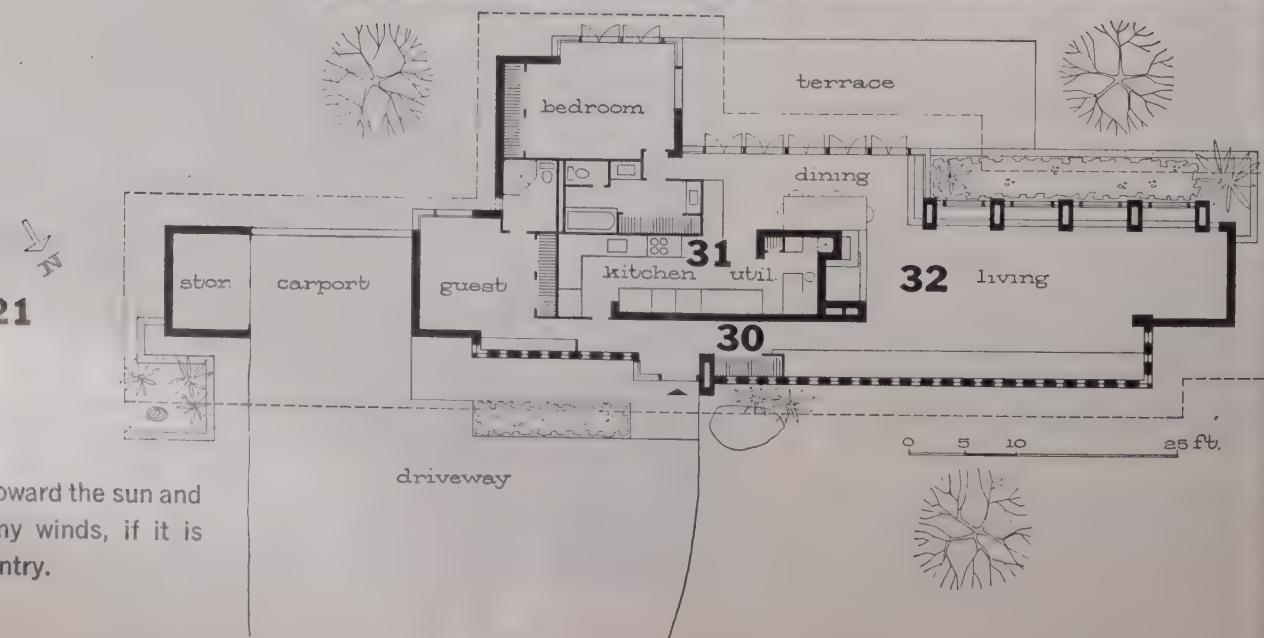
21

21 Face house toward the sun and away from stormy winds, if it is built in cold country.

15 Provide a driveway big enough for off-street parking.

16 Don't landscape the grounds for expensive maintenance.

17 Give the house privacy from the street—by planting, by facing glass areas toward the rear, by setting the house back.



To make a small house **work better—inside**

Photos: © Ezra Stoller



22

22 Put everything in the kitchen within reach of the housewife. Store utensils and dishes used every day on open shelves so she doesn't have to open cupboard doors over and over.

23 Make the kitchen tall so cooking odors can rise.

24 Keep the mess of the open kitchen out of sight.

30 Make even a small entrance hall long enough to give the living room some privacy. And make the coat closet big enough.

31 Put your kitchen at the heart of the house, even if it has to be an inside kitchen.

32 Pivot rooms around a huge fireplace—and hide the heater room behind it.



25 Punch a hole in the roof of an inside bath; light it from above.

26 Give the owner a huge bathroom mirror, and light it evenly all around the border.

27 Make the low "ceiling line" (in this house, actually a plate line) do double duty as a lighting trough.

28 Use natural materials that call for little maintenance.

29 Use shelves for decoration.





No man living has as many friends among the builders as Frank W. Cortright, founder of NAHB and its executive vice president for 11 years. No man living has been as close to the revolution in home building that is changing an ancient handicraft into a modern industry, with all a modern industry's design, production and merchandising problems. No man living has visited so many builders' houses; no man living has talked with so many builders about their problems.

In recent months Frank Cortright has been offering some very frank advice at the builders' meetings he addresses on his constant travels. We think his advice is so important that we asked him to repeat it in this guest editorial.

A guest editorial by Frank W. Cortright

Today's tough selling market is the smart builder's big chance

Everywhere I go I find some builders moving ahead while others are falling behind. Everywhere I go I find some tracts selling well while others are slow. Everywhere I find new men coming to the top fast; old timers must look to their laurels.

With rare exceptions the builders forging ahead today are builders who produce a constantly better and better house and merchandise it more effectively. The builders falling behind are builders satisfied to build what sold last year in their areas, builders who try to get away with the same house and the same selling methods.

From now until 1960 competition will force our industry to improve its products faster and faster to sustain the high sales volume we need.

In the easy years right after the war any builder (or nonbuilder, for that matter), could build a house in almost any location and sell it with little or no effort if he had attractive financing. When things slowed down a bit Uncle Sam was always ready to supply whatever was needed to keep starts above a million a year, making mortgage terms still more liberal and pouring vast sums into the secondary market.

Those easy years brought too little improvement in our product and our methods.

Better design, better selling features and better merchandising all had to wait until competition got tough in hot home building areas like Los Angeles, San Francisco and New York. From there these new ideas are now spreading to other areas, but they are spreading much too slowly. There are still many cities and towns where builders have yet to learn the selling power of good color, split-level design, patios, built-in equipment, bigger and better kitchens and many other important merchandising features.

In my constant travels I see the best and the worst in design, construction, merchandising. I see what smart builders are doing to glamourize their products, cut their costs and better their values.

Here are the most important reasons the smart builders are still able to keep their sales curve climbing

Smart builders know that today's most important prospects are second time buyers

Today's best prospects are families who already have a fairly good home—families who need not buy unless they want to—families who will buy only if they are offered something much more appealing than what they have now.

Smart builders study the people who buy their houses

They study what kind of people they are, where they come from, what they like, what they don't like. They employ research firms to get unbiased facts from homeowners they and their competitors have sold. They ask what advertising brought them out, what features made the sale, what changes they would like the next time they buy.

Smart builders are borrowing design ideas and selling ideas from the auto makers

An industry that can force on the American public nearly 8,000,000 new cars (most of them not needed), should be recognized as a major competitor. More and more potential home buyers are being disqualified by VA and FHA because they have already fallen for so many other sales appeals.

Smart builders no longer buy the least expensive land

They know that fast selling tracts must be handy to schools, churches, stores and transportation.

Land costs have doubled in the last three years; community facilities and restrictions put an almost prohibitive cost on the manufactured lot. As land approaches one-fourth the total sale price, it is getting harder and harder to make a building profit on top of the profit the land-seller takes.

Smart builders are trying to find good architects to team up with

They are looking for architects who know how to make homes more attractive and more livable without risking extremes beyond the taste of the community (that can be disastrous). Smart builders know that today's house is changing fast inside and out. For example, longer, lower roof lines; broader eaves, more windows, sliding glass doors, indoor-outdoor living, new materials,

new color, and better interior arrangements are fast becoming musts. Bigger families make the second bath a necessity. Television forces a family room. Kitchens must be larger, lighter, gayer, more colorful, more efficient, with every built-in convenience that the mortgage loan will allow.

Sell the woman and your deal is made. Smart builders today are using maximum kitchens rather than the minimum of only a year ago.

Smart builders are re-studying their methods to cut out every waste

All buyers want a bigger house than they can afford, so builders are caught in a painful squeeze between the buyers' demand for more and more house and our own fast-rising costs for land, labor, materials and site improvements. How to offer more for less is always the \$64,000 question.

Smart builders are learning that good site planning can have tremendous sales appeal

Smart builders are employing skilled landscape architects to exploit the selling potential of patios, fencing, play areas, barbecues, trees, flowers and lawns; and they are using glass walls to let people indoors get more visual enjoyment of the better planning outdoors.

Smart builders are learning to sell from the dressed up model house

They are calling in good interior decorators to help them give their models maximum eye appeal. They are using underscaled furniture to make their rooms seem bigger. They are showing many optionals at fixed prices which can be included in the mortgage. They are tying in with all the smart points of sale merchandising aids offered by the best manufacturers and advertisers. *The difference between success and failure depends on maximum model house merchandising.*

Smart builders study what other smart builders are doing

They learn from their competitors many good new ways to sell better for less. They study what other builders are doing in their own areas. They also study what smart builders are doing in other cities, either by traveling around from city to city or by making time to read about them in our industry's excellent trade journals.

There are still hundreds of thousands of American families who are dissatisfied with their present houses. They will buy your new houses if you offer them something really better—something more colorful—more convenient—with better living. It is up to you to build that better house. If you build it and merchandise it with skill and imagination, your sales problems will be solved.



Only a top flight architect could



John Campbell and Worley K. Wong

give a tract house



Houses planned for a hillside and a view . . .

such style*



. . . have distinctive, simple exteriors and good plans



Dramatic entrance displays the architects' simple and sure showmanship.

The wide overhang does much more than shield the entrance from the weather; it makes the doorway seem more important, and it ties the garage into the design. (See also small picture above.) The wood strip pattern and handsome hardware are doubly effective with an unpaneled door as a foil, and the planned planting softens the precise lines of the doorway.

Builder: The Wm. Blackfield Organization.

Location: San Francisco.

Decorators: (for the downhill house, pp. 144-147) Frances Baer; and (for the uphill house, pp. 148-149), George Smith.

These are the first builders' houses designed by San Francisco's famed architect firm of Campbell & Wong. The houses were built on tiny lots winding around the foot of a steep hill that overlooks a magnificent view.

The architects took the job at a low fee because they wanted to break into the builder market. They designed four models at \$500 each (plus \$50 a house royalty), included eight color schemes and advice on furniture.

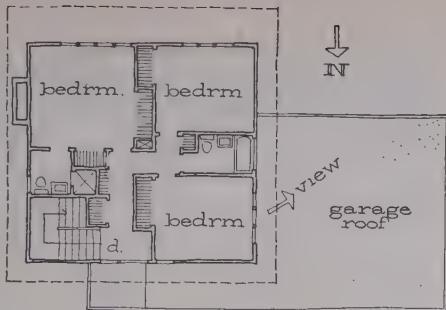
Of course, this was a one-time bargain. Now they are getting \$1,500 for each model plus \$100 a house royalty on their second builder job—a tract of 200 houses. But this fabulous buy sums up why a good architect is *always* a good investment.

Before half the houses could be built all but four of the projected 40 had been sold—at prices from \$25,000 to \$27,000!

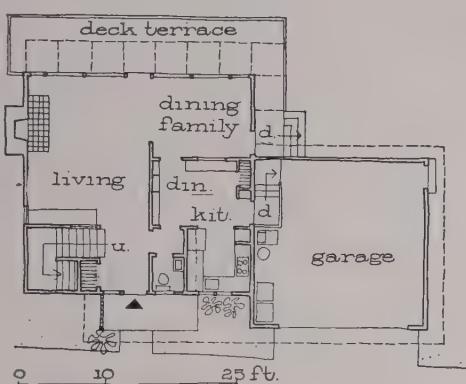


And it cost the builder only \$80 per house!





Two-story plan lets every room in house share wonderful view. Only a two-story plan could squeeze a 1,680 sq. ft. house, 350 sq. ft. terrace, plus a double garage on tiny steep lots. Houses had to be close to street, with deck instead of terrace in rear. Storage has extras like broom closet on each level, canned-goods closets near kitchen. Good traffic: kitchen is near garage; second full bath between two smaller bedrooms.



Rooms flow into each other and out onto the deck through wall to wall glass. Simple masonry fireplace sets off rich wood paneling. Fireplace is treated simply so it doesn't compete with the impact of the view. Small-scaled furniture makes room seem bigger inside. A second door to the deck (not shown) provides access to dining-family area, should the family decide to partition it from the living room.

Only a top flight architect could give a tract house such livability



Living room stretches through glass as far as the eye can reach. It is separated from the entrance hall by an 'open screen, which separates areas without setting limits.



Sun deck cost a lot less than a terrace would have on the steep hillside. It substitutes for terraces which site made impractical, extends living area. Shadow frame above can support vines, plastic panels, bamboo or canvas to shade big windows.

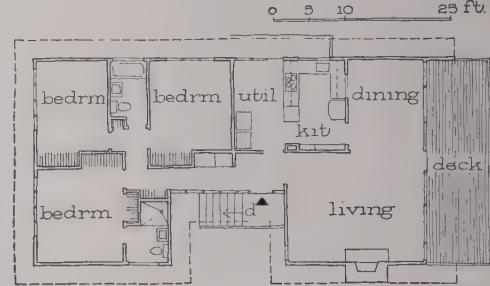




◀◀◀ **Oriental serenity of the living room comes from skillful integration of its elements. The tall, narrow window, for instance, does two things: it "raises" the ceiling, making the room seem bigger, brings light into a dark corner. It is easy to arrange furniture in a room like this with plenty of uncluttered wall surface and a striking fireplace as focal point.**



Exterior is painted in contrasting tones to cut height. Chimney is described on p. 169. Cantilevered deck shields living room from street. This is model; office subs for garage.



On uphill side, living room had to perch on top of garage to get the view, so architects passed up two-story plan (which would have put bedrooms two full flights up).

Only a top flight architect could vary the basic model with the same good looks and bright ideas



Pass-through between kitchen and dining room can be completely closed when desired. Full length doors are formal, in keeping with the formal character of the dining and living areas.



◀◀◀ **The compact kitchen fits appliances and 15' of counter space into an economical U-plan. And it gets the view through the open pass-through. Cabinets up to the ceiling hold infrequently used items as well as daily-use utensils. This picture was taken from the adjoining laundry area, which does double duty as an informal eating space. Corner cupboard at left of range counter opens into the utility room.**

Walking into this house is an occasion—and the first step toward a house sale. The covered walk promises relaxed, comfortable living—a promise fulfilled by the architects.





ROUND TABLE

Here is the report of an industry Round Table on wiring costs jointly sponsored by House & Home and the Research Institute of NAHB

Adequate wiring costs a lot more to add after a house is finished than it costs to install while the house is being built.

It costs so much more to add later on that FHA, VA, and all other appraisers in their new house valuations should:

1. *Penalize inadequate wiring*
2. *Encourage adequate wiring by giving full credit for its reasonable cost.*

It costs so much more to add later on that FHA should require less income rather than more (as it does now) to buy a house with adequate wiring.

It costs so much more to add later on that home buyers are penny wise and pound foolish not to insist on adequate wiring from the start, even if it should add \$100 or even more to the first cost of their home; it will save them a lot more than that in the long run. In fact, home buyers would be smart to demand wiring more than adequate for today's uses, for ten years from now the average home will use twice as much current as now.

Today not one new house in five gets wiring adequate for today's electrical needs; not one in ten gets wiring adequate for tomorrow's much greater needs. Sooner or later this inadequate wiring will cost the buyers of this year's new houses more than \$100 million to correct.

Unfortunately, too few home buyers are informed enough to pay extra now for the wiring they need, so . . .

National Association of Home Builders

RALPH JOHNSON, technical director

DAVID SLIPHER, past chairman
Research Institute

ERNEST ZERBLE, chairman
Small Builders Committee

WILLIAM WEIST, engineer
Place & Co., South Bend, Ind.

EDWARD REGAN, vice president
Hughes Development Co., Wichita Falls, Tex.

Edison Electric Institute

EDWARD GEORGE, chairman, Wiring Prom. Com.
FRANK KITZMILLER, manager, house power program
T. O. MCQUISTON, chairman
executive committee, commercial div.

National Electrical Contractors Assn.

CHARLES P. BOBE, chairman, research & education

JOSEPH D'ANGELO, North Shore Electric Co., L. I.

National Adequate Wiring Bureau

CARL BREMICKER, chairman
JOHN BIGGI, manager

Industry Committee on Interior Wiring Design

HOWARD STEVENSON, chairman
H. H. WATSON, engineer

Electric Utilities

CARL BREMICKER, vice president
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EDWARD GEORGE, vice president
Detroit Edison Co.

T. O. MCQUISTON, vice president
Metropolitan Edison Co.

LOUIS A. SCOFIELD, vice president
Consolidated Edison Co.

HOWARD STEVENSON, asst. mgr. of operations
Detroit Edison Co.

JAMES O. COVINGTON, mgr. adequate wiring bureau
Consolidated Edison Co.

Manufacturers

Arrow Hart & Hegeman Electric Co.

P. C. SMITH, executive vice president

Bulldog Electric Co.

WILLIAM H. FRANK, president

Carrier Corp.

WILLIAM McGRATH, chief engineer

Frigidaire

JOSEPH M. RUSHTON, supervisor, major dealer sales

The more we cut the cost of adequate wiring the sooner all new houses will provide it

And the plain and simple fact is that:

Most houses cost much more than they need to cost to wire for their present electrical capacity and many houses could have adequate wiring for little if any more than today's average cost of inadequate wiring

Builders and architects say this too high cost is not their fault—they leave the wiring to the electrical contractor and take the lowest bid. Electrical contractors say it is not their fault—they do the job as cheaply as they can with the materials and methods they know—if their local code allows them. Manufacturers say it is not their fault—they make what the contractors order and often they have tried in vain to market more economical devices.

In brief, this too high cost is nobody's fault and so it is everybody's fault. It shows up a serious failure of team work between the electrical industry and the home building industry. It shows up a serious failure of industry communication.

And the end result is that, after 30 years of almost unbelievable electrical progress, most new houses are still wired with many of the same methods and devices as houses built a generation ago. The use and acceptance of better wiring systems has fallen far behind the soaring use and acceptance of the electrical appliances which make better wiring essential.

There is a better way—and often a lower cost way—available today for every step in wiring the house. There are better materials and better devices—but too often manufacturers do not push them, distributors do not stock them, contractors do not know them. There are better methods and better systems—but architects and builders do not plan for them or specify them, contractors do not push them and often do not know them, appraisers do not encourage them and backward local codes do not permit them.

So today anyone who insists on wiring a house the most efficient and economical way must *pay not less but more*, because contractors bid high on unfamiliar specifications, journeymen work slower on unfamiliar methods and much of the material and devices must be bought on special order!

The sooner we can get these better methods into general use the sooner this general acceptance will let us realize the savings they should offer.



BIGGI: The first advice I would give builders is to do more preplanning in the wiring layout.



STEVENSON: A builder can almost always save money by giving careful thought to his wiring.



COVINGTON: The wire is cheap. It's the labor that's expensive.



BOE: Labor is three-fourths your job—material is one-fourth.



SLIPPER: What goes into a house is determined by whether it can be financed.



JOHNSON: Big reason wiring costs are important is that FHA sets a limit on what people can pay for a house.

General Electric Co.

CONSTRUCTION MATERIALS DIV.
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H. H. WATSON, commercial engineer
TRUMBULL COMPONENTS DIV.
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Leviton Manufacturing Co.

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MARTIN SCHWARTZ, sales manager

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JOSEPH E. HAGENDORN, past president, eastern section

N. Y. State Building Code Commission

FRED MAYGLOTHLING, assoc. bldg. electrical engineer

Consultants

CARL BOESTER, housing consultant
Purdue Research Institute

JAMES T. LENDRUM, director
Small Homes Council, Univ. of Illinois

FHA Observers

NEIL CONNOR, director, Architectural Standards Div.
FRED McGHAN, Architectural Standards Div.

VA Observer

ROY FUNK, architectural engineer

Moderator

P. I. PRENTICE, editor & publisher
House & Home



ROBY: We electrical manufacturers are fighting codes in all parts of the country for a chance to furnish less expensive equipment.



RUSHTON: We face a continuous pressure to give more for less.



BREMICKER: An extra \$50 spent for better wiring can save homeowners a lot of money later on.



REGAN: In my part of the country it just is not true that home buyers will pay \$70 extra to get adequate wiring.



E. O. GEORGE: Consumer education to demand better wiring will help help trim down its cost by creating a greater market.



KITZMILLER: Many utilities are glad to provide a free wiring check-up.



T. O. MC QUISTON: Better wiring standards and techniques are in the public interest.



FORBES: Better lighting was the first reason for wiring the home.



FRANK: Surface wiring offers both flexibility and convenience.



SCOFIELD: Adequate wiring must start with an adequate service entrance.

To cut the cost of adequate wiring we have a big teaching job to do

The electrical manufacturers and utilities have launched a fine educational campaign to teach the public to insist on adequate wiring for adequate *housepower*. Now we need an equally effective campaign to teach every one in our industry how to provide that adequate *housepower* at the lowest possible cost.

Today the National Electrical Contractors (NECA) are the only national organization sponsoring a nation-wide effort to spread the know-how needed to get better wiring for less money. They conduct a good educational program in many cities, but it reaches only their own members. It does not reach the builders, or the architects, or the dealers, or the appraisers.

Everybody learns best and fastest by seeing, so one excellent way to teach economy in good wiring would be to wire demonstration houses in which architects, builders, appraisers, electrical contractors, and electrical dealers could all see with their own eyes what is needed and how to do it. The Research Institute of the National Association of Home Builders has suggested making houses under construction available for such demonstrations in each of the 262 cities where NAHB has a chapter. This is a fine offer.

But before those demonstration houses can be wired we need a wiring economy primer, setting forth clearly and simply the best methods and materials to get adequate wiring at minimum cost. No such primer has ever been written, so we are including such a proposal in our report.

To cut the cost of adequate wiring we need wiring-wise appraisers

The merchant builders (who now build five new houses out of six) seldom spend a dollar for anything the appraiser will not recognize and add to their valuations; they seldom spend a dollar for anything the mortgage lender will not approve and finance. Any other costs must be added to the down payment and builders have learned the hard way that whatever adds to the down payment hurts their sales instead of helping them.

That makes it essential that appraisers should learn a lot more than they know now about what adequate wiring ought to cost, so they will stop discouraging adequate wiring with inadequate appraisals.

Appraisers must learn the difference between good devices that will last and cheap devices that will soon give trouble. They must learn to give full credit for money wisely spent to make future wiring additions cost less. Conversely, it would be a fine thing if they could stop subsidizing waste (as they now do) by giving higher appraisals to cover the cost of useless features required by backward codes—features that add many dollars to the wiring cost without adding a penny to its value.

We could achieve adequate wiring in all new houses almost overnight if FHA, VA and all other appraisers would announce a policy of knocking \$50 off the valuation of any small house that does not qualify for an adequate wiring certificate and adding \$50 to the valuation of every small house that does.

To cut the cost of adequate wiring we must find ways to save on labor

Every industry in America is heading into a very difficult shortage of all kinds of labor to meet the needs of our fast-expanding economy. The electrical industry is among the fastest-expanding segments of this expanding economy so the shortage of skilled electricians will soon be very serious indeed; it is already bad in many areas. The US labor force is growing only 1.3% a year. The demand for electrical equipment and electrical wiring is growing at least ten times that fast.

It is foolish to think we can find enough electricians to install adequate wiring by present methods in the 2,000,000 homes a year we will have to build in the mid-Sixties. Right now it is doubtful if we could find enough electricians to install adequate wiring by present methods in the 1,200,000 houses we hope to build this year. And if the adequate wiring campaign were to catch on in a big way and bring a heavy demand for adequate wiring in the 40,000,000 homes now inadequately wired we would find ourselves in a really impossible mess and have to admit the job could not be done.

So economy of labor must be the first purpose in any rethinking of how to provide adequate wiring more economically. Economy of labor will almost automatically spell economy of dollars too, for labor costs more than the materials used to wire a house.

Many local electrical codes and many labor practices in wiring are designed to require as much local labor as possible. *The growing shortage of electricians makes it more important than ever to change these codes and practices before it is too late.*

It takes a skilled electrician to wire a house safely. But today too much of the work the skilled electrician does in the average house is work any high school sophomore could do—like drilling 200 holes in the framing or tightening 800 screws at switches, outlets and other devices.

To cut the cost of adequate wiring we need new easier-to-use devices

With today's molds, machines and methods almost everything can be done better and cheaper in the factory than in the field. To profit on this economy we need many new wiring devices engineered to save the installing electrician's time.

There is no use expecting electricians and builders to figure out what these devices should be or how they could be made for the same cost as today's harder-to-connect-up devices. This is a challenge only the manufacturers can meet, for only the manufacturers know their own production economies, only the manufacturers have the nationwide volume needed to spread the cost of such a research and development program and only the manufacturers have a big enough profit incentive.

Not enough manufacturers are meeting this challenge. Too many manufacturers are waiting for the electricians to demand new products instead of taking the initiative.

Our two-day Round Table gave us too little time to list all the new wiring parts we need. Here are a few of the most obvious items:

No manufacturer we know makes the easiest-to-install devices for convenience outlets on the 3-wire circuits whose general use the Adequate Wiring Bureau recommended more than a year ago. No manufacturer makes a low cost duplex receptacle in such a way that it can be connected with one outlet on each circuit by just pushing three wires in from each side. No manufacturer makes the device we need to take off a tap without a splice by just pushing the wires into prewired connections in the nearest outlet box. No manufacturer makes the right outlet box for such a tap. No manufacturer makes a three-wire device with its terminals arranged for wiring straight through from both sides—the easiest way for the electrician to wire a convenience outlet on a circuit run through the studs at a base plug level. And no manufacturer makes the right outlet box for such a device.



WATSON: *Soldering is an archaic method of making connections, but it's still required in some areas.*



DESPARD: *We'll develop devices for 3-wire circuits.*



BLACK: *About 25% of the devices we sell are pressure locked.*



LEVITON: *The pressure lock connection is the biggest wiring advance in 25 years.*



CONNOR: *Should FHA outlaw No. 14 wire? Should FHA require a 3-wire system?*



MCGRATH: *What would it cost if you just outlawed No. 14 from the house?*



P. C. SMITH: *It costs more to make a quiet switch because it uses silver.*



D'ANGELO: *It could be cheaper to use aluminum wire to the range.*



MAYGLOTHLING: *What do you do about portable appliances?*



BOESTER: *With all these new cooking gadgets cooking will soon be done all over the house—not just in the kitchen.*



LENDRUM: *In Chicago squeaky floors are standard because the electrical code requires rigid conduit.*



SCHWARTZ: *On a three-way switch low voltage should cost less.*



MURPHY: *I hate to admit that the electricians and builders don't know what we are making.*

Here is a brief and simple primer telling how to wire better for less

There is a better way, a better method, a better device, a better size for every step in wiring the house—by this we mean, a more efficient way, a more economical way, a way to provide more adequate current either at a lower cost or at minimum added cost.

Here are 34 specific recommendations that should be followed in almost every house but all too seldom are.

Most of them will cut the first cost of wiring. A few would increase the first cost to save four times as much later on.

Taken separately, many of the separate savings can be counted in pennies. But taken together they add up to a new planned approach to wiring economy—a new approach that should provide adequate wiring at a cost lower than most builders now pay for inadequate wiring.

The key to this saving is teamwork and preplanning to do everything in the easiest way with the easiest-to-wire devices with the least waste of time, labor, and materials.

By the definition of "best" offered in the opening paragraph above:

best conductor to use from entrance cap to entrance box is 3 wire No. 2 service entrance cable.

In a one-story house it takes only a few minutes longer to install and costs the contractor less than \$10 more for materials than the 3 wire No. 6 still often used. The 3 wire No. 6 is so small it must be replaced at a cost to the home buyer of not less than \$40 to meet any major increase in demand, like an electric range or an electric dryer plus an electric water heater.

All these costs are four times as big in areas where rigid conduit entrance wiring is required.

best entrance box size is at least 100 amp. which is the minimum standard of the Adequate Wiring Bureau. In some makes a 100 amp. box costs no more than a 60 amp. box for the same number of circuits and a 150 amp. box costs the contractor less than \$1 more.

If the original entrance box is not big enough for future needs it will cost the home buyer from \$15 to \$60 (depending on his city) to install additional entrance equipment later on.

best service and distribution panel to use in most houses is the split-bus type, in which major appliance branch circuits and feeders up to a maximum of five are taken off ahead of the main lighting disconnect.

This saves money in three ways:

1. The split-bus costs less than any other device that can handle today's heavier loads (up to five heavy appliance branch circuits and ten single pole general purpose branch circuits).
2. It ends the need for a single main switch or circuit breaker, saving its entire cost (which may be anywhere from \$6 to \$60).
3. It is easier to make all the connections in one box.

The split-bus panel has been permitted by the National Electrical Code since 1937 and is now accepted by all progressive local codes. With circuit breakers it can be bought with only the take-offs needed for the initial wiring; the blank positions

can be filled with the right sized breakers as additional circuits are added. With fuses the same flexibility will soon be available. The panel box should be so designed that the electrician can see at a glance where to connect the neutral for each circuit.

The old "main, range and four" is quite inadequate for today's wiring needs; so most contractors install more than one. A pair of too-small boxes with fuses costs them about \$9 less than a single split-bus panel the right size, but their installed cost is quite a bit higher.

Despite their economy—both immediate and long range—split-bus panels are being used in only one house in ten.

best place for the entrance box is as close as possible to the center of heavy loads (range, water heater, laundry).

best way to wire a rear kitchen-utility area is to run a 3-wire No. 4 feeder to a rear load center from the service entrance which should be located at the nearest point in the front of the house (3-wire No. 6 is enough if cooking is never to be electrical). This will permit very short branch circuits in the appliance area. At trade prices 20' of 3-wire No. 4 costs the electrical contractor less than \$8; an 8-circuit sub-panel costs the contractor about \$11.50.

Today not one rear kitchen house in 100 takes advantage of this economy.

best way to wire a house is with non-metallic sheathed cable (like Romex) because its installed cost averages about 15% less than any other. Second best is armored cable (BX) which does offer the advantage of an automatic ground. Third is knob-and-tube,* the way homes were wired

Continued on p. 174

** In a knob-and-tube area like the Pacific Northwest you can get lower bids for knob-and-tube than for Romex, because local electricians are accustomed to it. But that does not alter the proven fact that where workmen are equally skilled in different systems Romex is substantially cheaper to install. Knob-and-tube is the best system if the house is likely to be flooded, but it is likely to make trouble where insulation is blown into the walls.*

The shelter magazines know that, more and more...



people no longer build houses THEY BUY THEM

Today not one house in six is custom built and the percentage of custom built houses gets smaller and smaller as the merchant builders call in architects, get better design and move up into the higher priced field.

So this year the shelter magazines have been giving more and more space to ready-built houses—what to look for in a ready-built house, how to give individuality to a ready-built house, how to decorate a ready-built house, how to live in a ready-built house.

For example, take a look at the houses shown above: *Parents' Magazine* featured a Stern & Price house built in Cupertino, Calif.; *Good Housekeeping* showed a house built by John A. Walser in St. Matthews, Ky.; *House & Garden* featured a Scholz prefabricated house built by Seamen Construction Co. in Princeton, N. J.; *Better Homes & Gardens* featured a Carl Koch Techbuilt house in Cambridge, Mass.; *Household* ran a house built by Thomas Northcutt of Nordec, Inc., Cobb County, Ga.; and *Living* showed a house from Robert Gerholz in Flint, Mich.

This month, *American Home* has a story on how to live in a tract house and like it (see page 158); *House Beautiful* gives eight pages to its idea of how to decorate a fairly typical tract house (see next page).

Photos:
Ernest Braun
Wm. Howland
Andre Kertesz
Lisanti, Alderman
Rodney McCay Morgan
Luis Lemus

This is how House Beautiful would decorate Andy Place's model

Photos: William Howland



Dolled up by "House Beautiful," the Place model shows results of \$1,200 worth of landscaping and individual color schemes.

Who would ever dream this is a builder's tract house?





BUILDER: Place & Co., Inc.
DESIGNER: William Weist
LOCATION: South Bend, Ind.

Custom-house touch of wood paneling (used in family room (left) and also in formal living room) costs only \$300, does a lot to style up the house.



The family room doesn't look like yesterday's "rumpus room." But asphalt tile floor, wood paneling will take a lot of wear. Warm wood tones are shown off by blue ceiling and fabrics.

Blue, used in master bedroom, living and family rooms, helps to unify the decorating plan. Bedroom looks bigger because of its one-color scheme.

How to live in a tract house—and like it

"Basic living expenses should not and need not eat up all your money."

That's why it makes sense to buy a tract house, says the September *American Home*. By way of contrast, the magazine first cites the case of two young couples who *don't* live in a development.

The first couple won't settle for less than their dream house. They have been looking for it for five years without finding it. Meanwhile they "make do" with an inadequate house that limits their living.

The second couple have their dream house and a mortgage to match—so they "make do" with an inadequate budget and a huge debt.

But a third couple who did buy a tract house have now had seven happy years in it. The cost was low enough to leave them money for extras like trips, theatres. So *American Home* gives you two reasons for buying tract houses:

You get a house you like for a price you can spend—and you get it *now*.

"American Home"—Fairchild Aerial Surveys



What "American Home" tells 3,000,000 readers to look for

Good builder: "A builder with a good reputation who has an architect design his homes is one of your best guarantees."

Good floor plan: "Space, privacy and efficiency. It shouldn't be necessary to walk through the living room to get from the kitchen to bedrooms and baths."

Good rooms: "Door and window locations should allow easy furniture arrangement. Bedrooms should have cross ventilation."

Good storage: "Check for ample closet space, space for linens, a big guest closet, a cleaning closet, an area for long-term storage."

Good kitchens: "Look for a kitchen large enough to meet the demands of your family, with ample storage space and efficient arrangement, and near the dining area."

Good design: "Be sure the builder offers an assortment of designs and varies the position of the houses in relation to the street."

Good expansion: "Make sure that the house you buy can be expanded without too much expense without ruining the design. A good dry basement offers possibilities; so do attached garages and breezeways."

Good orientation: "The house should take advantage of the best view from the living area and insure privacy for outdoor living."

Good landscaping: "The ground should slope gently down and away from foundations. Beware of builder who strips the land."

Good streets: "Streets should be curved to prevent high-speed driving. They should be completed when your house is ready. Look out for very steep drive to your garage."

Good wiring: "The service entrance should have at least 100 amp. capacity. See if there are enough outlets and switches, with outlets located to fit furniture arrangement."

Good heating: "Find out who makes the boiler or furnace and the reputation of the contractor who installed it. Make sure the builder includes ducts or piping for future air conditioning."

Optional extras: "Be sure you know exactly what's optional."

Good workmanship: "Look for seasoned wood, good tight joints free of splits, interior trim free from dents, nail heads countersunk, paint free from streaks."



THE PACKAGE MORTGAGE gave her this work-saving PACKAGE KITCHEN

The Package Mortgage has made housework easy for millions of busy women. It has sold millions of appliances. It has helped sell millions of new houses. It has helped sell millions of better kitchens into older houses.

The Package Mortgage lets home buyers finance almost all the equipment needed for the house the same way the furnace and hot water heater are financed—under the mortgage.

The Package Mortgage has taught millions of families to want all the best new labor-savings aids *now*, creating far quicker acceptance and demand—in homes both new and old—for new products like dishwashers, disposers, clothes washers, clothes dryers, freezers, built-in ovens, burner tops, intercoms and exhaust fans.

Now the Package Mortgage is in danger

The Package Mortgage is caught in a sudden and surprising crossfire from two smart Washington lobbies. One is a retailer lobby, fighting because retailers do not get a big markup on appliances sold to builders. The other is a furniture lobby, fighting because up to now the appliance industry has made better use of the package mortgage to sell its product.

Their double attack on the Package Mortgage almost succeeded, for it caught the home building industry unawares. It came so near success that the Senate Finance Committee almost voted a package mortgage ban for VA and FHA financing. It came so near success that FHA has in fact been told to show cause why the Package Mortgage should not be banned by the next housing act.

Before Congress makes any such mistake, let's take a fresh look at the Package Mortgage. Whom does it help? And how true are the arguments against it?

Photo (above and p. 162)
Bernard of Hollywood; from
Holiday Kitchens

The Package Mortgage is good for

1. The Package Mortgage is the only way most families can afford to buy both a good house and a good kitchen

On short term credit at the usual 9.6%-or-more interest, the monthly payment on a \$1,500 kitchen doubles the monthly cost of owning a \$12,000 home—increasing it from \$72.42 per month to \$144.32 per month for the critical first two years. By FHA minimum income standards not one family in ten can afford this double cost—for FHA will not let any family whose No. 1 bread winner makes less than \$7,800 a year take on a monthly home-buying payment of \$145 a month.

2. The Package Mortgage saves home buyers hundreds of dollars in installation costs

Every major appliance except the refrigerator involves installation expenses which often run over \$100 and some times \$200 for a single unit. The washer-dryer must not only be connected up to the plumbing and the electric or gas lines, but also be vented outdoors. The dishwasher and disposer need both plumbing and power connections. Stoves need gas connections. Ranges require heavy electric wiring. Exhaust fans should be built into the wall. Even freezers need separate circuits to the entry box.

All these installation costs are four times as big if the home buyer has to pay for them after the house is finished. The installation saving made possible by selling the house fully equipped is often more than the whole difference in interest cost between two-year short term credit and 20-year mortgage credit.

3. The Package Mortgage gets the home buyer a good price on his appliances

FHA makes the builder pass on to the buyer most of the discount he gets on his volume purchase of appliances. (Usually FHA includes in its valuation only the average price builders in the area pay on each, plus 10% for overhead and 5% for profit.)

In practice many builders offer home buyers an even better appliance deal. For example, Builder Wilson Brown in Dallas puts only \$1,700 into the price of his \$13,200 house to cover the installed cost of seven built-in appliances whose list price totals \$2,500. California Builder David Bohannon takes no markup at all on built-in oven, range, dishwasher and refrigerator, figuring their inclusion in his house package cuts his selling cost more than enough to make them profitable.

4. The Package Mortgage usually assures the home buyer a quality product

Smart builders offer appliances for just one reason—to increase the sales appeal of their house. And all smart builders know that the added sales appeal of a nationally-known appliance is worth a lot more to him than the few dollars extra discount they could squeeze out of an off-brand product.

5. The Package Mortgage helps home buyers get a better planned kitchen

Says Detroit Builder Ted Pratt: "Built-in appliances make it easier to design a good efficient kitchen."

Says Miami Architect Alfred Parker: "I wish I could build everything in, because 1) I can do a better design job, and 2) the builder can get a better installation job."

the home buyer because . . .

On a package mortgage FHA would require a down payment of 25%. On a 20-year amortized mortgage (the most common length of package deals), 5% interest on the \$375 balance would be \$219. But this \$219 is *gross*. It makes no allowance for the fact the owner would have had the use of his money a lot longer and could, if he wishes, get 3% interest on it from a savings bank.

So the homeowner's true interest cost of the long-term financing is not 5% a year, but 2% a year—the difference between the 5% interest he paid and the 3% interest he could earn on the money if he had not paid it out so fast. Over 20 years that difference on the declining balance of the mortgage adds up to only \$81. This is not \$354 more than the cost of short term credit. It is only \$27 more. Of this \$27 difference nearly \$7 (or 25%) is tax deductible, bringing the net difference down to only \$20 spread over 20 years!

And the chances are the homeowner who bought under the package mortgage got his appliance \$20 cheaper and saved a lot more than \$20 on the installation.

6. The Package Mortgage does NOT spread the payments beyond the life of the appliances

Everybody knows that some parts of the house wear out faster than others. After 20 years the frame and the foundation should still be good as new, but most average roofs last only 15 years, most paint lasts only five years, most kitchen asphalt tile lasts less than five years and too many one-year-warranty hot water heaters last only 366 days.

General Electric reports the peak replacement demand for kitchen appliances comes after about 12 years—15 for refrigerators and freezers, 13 for ranges, 12 for dishwashers and dryers, ten for clothes washers, disposers and water heaters—but usually they are replaced not because they are worn out but because the owner wants a newer model.

Westinghouse says: "Every appliance we have ever made can be restored to efficient working condition. Most appliances are replaced not because they are worn out, but because newer models have new features the homeowner wants. More than 90% of the first automatic washers we made in 1940 are still in use. Many refrigerators and ranges perform for more than 20 years without a single service call. Their life is as long as automatic furnaces and water heaters, both of which are financed by the mortgage without question."

By the time appliance replacement peaks up in the 12th year, a 20-year 90% mortgage is paid down to 45% of the original valuation and represents not much more than the cost of the land, the foundations, and the walls and structure.

7. The Package Mortgage does NOT make the home buyer take unwanted appliances

Around most cities home buyers have a wide range of choice. They can buy houses with no appliances, houses with many appliances, houses with a few appliances, houses with optional appliances, houses with appliances of every make.

With all this freedom of choice, it is noteworthy that in the most competitive markets the best selling houses are usually those that offer the best equipment under the Package Mortgage.

8. The Package Mortgage does NOT cost the home buyer a lot more interest

The furniture dealers were not telling the whole truth when they told Congress the interest cost of a \$500 item bought under the package mortgage is \$414; on short term credit is only \$60.

On short term credit the down payment would be 10%; the two-year 6% discount on the balance would be \$54.



The Package Mortgage is good for the appliance dealers because . . .

1. It makes the model house do double duty as an appliance display room

Every week end thousands upon thousands of families visit the show houses kept open by between 2,000 and 3,000 merchant builders. Some of them are looking for a house to buy. Most of them are just looking for new ideas. All of them see the smart, labor-saving appliances in the package mortgage kitchens and learn to want them too.

2. It fills new houses with appliances, makes every guest want more appliances

The new house sets the standard for the old. By definition modernization means making old houses look and work like new. Thirty years ago the appliance makers learned that the one best way to sell electric refrigerators into old houses was to sell them first into new apartments. Every new appliance—the dishwasher, the built-in oven, the disposer, the exhaust fan—has caught on first in the new house market and then spread from the new house to the much bigger old house market.

That's why manufacturers find the Package Mortgage so important. That's why they make such a special drive to sell the new house full of new appliances—preferably through their dealers if the dealers will get out and hustle for the builder's business, direct to the builder if the dealer can't sell him.

So . . .

3. It helps the dealer sell more appliances into new homes

Thousands of builders buy from their local dealers the appliances they finance under the package mortgage. And thousands of new home buyers buy additional appliances through a dealer.

4. It helps the dealer sell more appliances into older homes

5. It gets the dealer a lot of profitable servicing

Just listen to these enthusiastic appliance dealers on Long Island, where the package mortgage started

"Model houses are free show rooms for us. We can't afford to create demand. We don't have the showroom space and we don't have the foot traffic. The demand for wall refrigerators and colored appliances was built almost entirely by model homes and the publicity they got. We felt the public demand almost immediately."

"It's up to the manufacturer to create the demand. He has to get his equipment into the model houses and before the public. Then it is up to the appliance dealer to take advantage of this demand."

"In fact, most of the people who go through model houses are just shopping, and equipment on display there builds up demand for us in the older houses."

"Manufacturers sell the big jobs and frankly most of us dealers couldn't handle them anyway. We just don't have the financing. We can't carry a builder for months on his appliances, when he might be moving in a few hundred families every month. We still get the smaller tract jobs, for we can offer the service and freedom from call-backs that the small builder wants."

"New houses give the remodeling buyer his ideas. Between model houses and magazines, they may make Mrs. Old Homeowner want to change her kitchen. Our problem is not selling the equipment, which is done for us, but adapting too-lavish display kitchens to a smaller budget or floor space."

"Maybe if I could handle the big builder and couldn't get his business, I would feel badly, but I know I can't handle it, so I don't let it bother me."

FRANK TOMMASINI, *appliance dealer, Nassau County, N.Y.*

"New model houses are the biggest showrooms the retailer has ever seen. Every visitor to the model or to the home of a moved-in new family sees the new appliances and begins to want them for his own house. All this exposure to new appliances creates business for the nearby dealers."

"Furthermore, the new home buyers are good prospects, since their houses usually need more appliances than the builder includes; we retailers get these added sales."

"Criticism of the Package Mortgage stems mainly from the furniture people, who have not been able to get their merchandise accepted by FHA as eligible for long term financing, and from appliance dealers who are not experienced enough to realize they are not being hurt by the new house builder, but actually helped."

"We sell to many builders (we think we're one of the biggest on Long Island) and we also sell retail. We think things are going to be so good that we have just greatly expanded our retail store, right in the heart of the new house market here in Hicksville. Both ends of our operation have been growing steadily; neither one hurts the other."

"All these new houses—and new possible customers—spell opportunity for the retailer, but he has got to get out and work for the business. No dealer any longer can sit in his store and wait for the business to come to him."

A. W. (Gus) HARDT, HARDT & REID, *appliance dealers, Hicksville, Long Island.*

"Of course it hurts when a builder buys in one or two appliances direct from the manufacturer, but don't forget that the builder is adding another customer to your community, and that the customer will be there as long as you are. Each new house in your town means one more possible buyer for appliances at retail—first the extras and later the replacements."

"All this attack on the Package Mortgage is really aimed at the manufacturer who sells direct to the builder, often at prices lower than the retailer can get."

"We think all appliances sold by the manufacturer should be billed through some local dealer, with a small profit allowed him to compensate for servicing the goods. With the servicing the dealer would get a better chance to sell the customer whatever future appliances he may need."

ROBERT BLUMSTEIN, *managing director,
Intercounty Distributors, a buying co-op serving 18 Nassau County retailers.*

The Package Mortgage is good for the builder because it helps him sell a lot more houses

As selling gets tougher . . . as more and more builders find their best market among second-time buyers trading up for a better home . . .

The Package Kitchen sold under the Package Mortgage is proving itself the builders' best new sales appeal.

Listen to what builders themselves say:

St. Louis—“We would lose 50% of our sales if kitchen and laundry equipment were not in our mortgage. Many buyers have told us: ‘If we can include the built-in oven, range, disposer and dishwasher in our loan we can buy this house, because then we can also buy some furniture, rugs, draperies, etc., on our budget.’”—**FRED KEMP, *Contemporary Homes, Inc.***

Columbus, Ohio—“A majority of our prospects rate kitchen and laundry equipment as the most important thing they want in the home. Most of our buyers (at \$14,000-\$15,000) could not afford all these appliances if they had to buy them on short-term credit. Of our last 70 sales, 68 included a washer, dryer, range and refrigerator even though some purchasers already owned some of these items.”—**S. J. SLAVEN, *20th Century Builders.***

Richmond, Calif.—“At least 50% of our sales would be lost if we did not include appliances. Many buyers say: ‘If we had to pay for our appliances on short-term financing on top of our house payment, the double expense

would price us out of the market.’”—**GEORGE G. HOYT, *Hoyt Enterprises.***

Norfolk, Va.—“Prospects rate kitchen equipment first among the things they want. About 70% of our buyers couldn't afford a complete kitchen or laundry if they had to buy them on short-term credit.”—**EMORY H. AUSTIN, *Poplar Halls by Larrymore.***

Palo Alto, Calif.—“I believe the home buying public considers built-in kitchen equipment a necessary part of the house. They expect the builder to supply it as they expect their auto to come equipped with a motor. Our present practice is to install all items of kitchen equipment that can be built in.”—**JOSEPH L. EICHLER, *Eichler Homes.***

Baltimore—“Built-in appliances are the best things you can offer people. The package mortgage lets them buy a lot of better living they could not otherwise afford. Every buyer in our 100 houses wanted every piece of equipment we offered.”—**MAL SHERMAN, *realtor.***

The Package Mortgage is flexible, lets a builder offer appliances as options so each family can take what it wants

Colorado Springs—“In my last 60 sales, 59 out of the 60 families bought some optional equipment under the mortgage. By offering a choice of these items, I don't force anything on anybody. They bought what they wanted.”—**H. M. (TODD) SLOAN.**

Redwood City, Calif.—“About 80% to 85% of our buyers take built-ins as options under our loans. Built-in ranges and ovens are first in preference. Other popular options are, in order of preference, extra weatherstripping, extra insulation, tub enclosure, music intercom system, built-in mixer-blender, electric time thermostat, water softener, carpeting.”—**DON STOFLE, *Oddstad Homes.***

Memphis—“As optional equipment, 60% of the buyers of our \$10,500-\$11,700 houses paid

\$350 extra to get a built-in oven and range set in a brick wall backing.”—**WM. JAMISON.**

Flint, Mich.—“When we offer laundry appliances as options, 75% of our buyers take them. Our models featuring completely built-in kitchens are sold first.”—**JOEL R. STEICH, *Gerholz Community Homes.***

Denver—“One of our most talked-about items is our built-in kitchen. We will install any brand of appliance that a buyer wants and finance it under the mortgage.”—**GEORGE J. MONACO, *H. A. Swanson & Associates.***

River Forest, Ill.—“Buyer acceptance is beyond our expectations. About 75% bought our whole appliance package. Another 20% took all but one or two items.”—**GILBERT L. HOUSTON, *R. Houston Jr. & Sons, contractors.***

When a builder offers appliances or other equipment under a Package Mortgage the manufacturers often help him sell his houses—sometimes with tie-in advertising, always with point-of-sale promotion.

The Package Mortgage is good for furniture dealers because . . .

Families who buy their appliances with the mortgage have more money left to spend now on their living rooms and bedrooms.

There is a limit to what any family can afford to buy with cash or short term credit.

Today the furniture and house furnishings dealer is too often low man on the totem pole. Most home buying families are buying a car on the installment plan, and a great many home buying families give the kitchen next priority on their budgets.

Says JOHN HARMON of Drexel Furniture Co., Drexel, N.C.:

"Home building today is not so much housing as rehousing. People are moving to larger homes and better homes, and they all need to

buy new furniture. People who don't have to pay for their appliances with cash or short term credit can spend more money for furnishings."

The Package Mortgage will be still better for furniture and home furnishing dealers when they learn to use it themselves.

Already FHA has told the carpet industry it can finance carpets under the mortgage when, as and if it establishes satisfactory industry standards for how long its product will last.

Already FHA stands ready to finance many items of built-in furniture under the Package Mortgage—everything from built-in storage to built-in vanities and built-in beds.

How much longer will the furniture industry fight the trend to built-ins instead of recognizing the great new market built-ins offers?

The Package Mortgage is good for the mortgage lender because . . .

It takes care of the biggest single cause of mortgage defaults—the home buyer who buys so much on short term credit that he can't keep up with his payments.

Listen to lenders who have offered the package mortgage for years:

"The Package Mortgage inaugurated more than a decade ago is a conspicuous forward step in the modernization of home financing.

"The Package Mortgage reduces the burden of home ownership in the early years and thus makes it less likely that the borrower will be unable to meet his payments. The Package Mortgage simplifies the financing for the borrower who has only one lender to deal with instead of several. The successful experience of many lenders with the Package Mortgage has established its position as an integral part of modern home financing." L. DOUGLAS MEREDITH, vice president National Life of Vermont.

"The Package Mortgage provides an added safeguard for the home mortgage lender's investment by reducing the required monthly payments for the appliances more than 80%. The high payments required under the installment

loan plan can and sometimes do result in mortgage defaults."

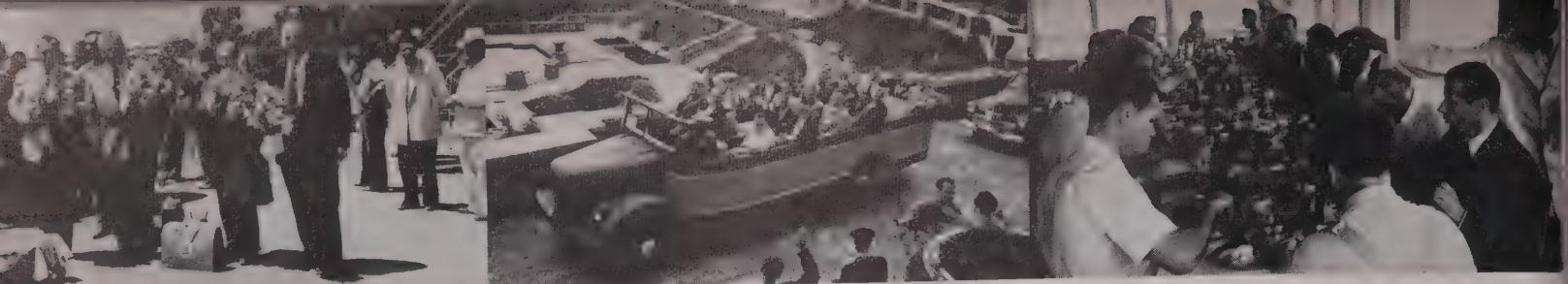
"Major appliances are no more a wasting asset than a heating plant or other mechanical items which have to be maintained and kept in repair."

GEORGE C. JOHNSON, president of The Dime Savings Bank of Brooklyn.

"The Package Mortgage has been one of the most significant recent advances in home finance. It contributes greatly to the stability of home ownership and eases the financial problems of the new homeowner. It is not only an ideal way to finance the home and its necessary equipment; it is also a safer and more desirable investment for mortgage lending institutions."

ARTHUR WIEMER, Dean, School of Business Administration at the University of Indiana.

In brief, the Package Mortgage is good for everybody!



Bouquets of flowers were one of the many expressions of hospitality. Earl Smith (center); Coogan (right).

Open-top bus took us sightseeing in the beautiful Black Sea area. Usually we took side trips in automobiles.

Caviar, wine, big meals, official receptions were an everyday event. Here, lunch at river station in Moscow.

We watched the Russians



Women do most construction work. This one makes prefabricated apartment house walls (like one at rear). Relatively unskilled, her work is kept accurate by steel jig which rolls on track as sections are finished.



Punishment to slow workers comes when their names are posted on this big crocodile list outside apartment house. But groups of workers who make or exceed their quota are honored by having names posted on honor roll at right and receive bonus pay. Most projects have such incentive schemes.

Our trip to Russia this summer gave us an opportunity to observe the accomplishments of the Russian building industry. Unlike the US, residential building in Russia is predominantly apartment construction and is completely dominated by the State.

We traveled over 6,000 miles, visiting 14 major cities. We also managed to visit some of Russia's many scenic and historical landmarks. The Russians were generous and hospitable hosts. Food and accommodations were good. We were at liberty to take pictures, some of which are presented on these pages.

Curious crowds, sometimes several hundred people, gathered around us wherever we went, asking questions through our interpreters. Many of the children spoke some English.



building

Pictures and text by Tom Coogan



Prefab masonry is seen everywhere. Joints looked sloppy, to us but Russians don't worry about finish, will cover with stucco.

Reinforced concrete, roof girders are made in sections. Note precast steel pins at bottom of piece at right which fits into next section.

Precast panels like these interested all of our party as we thought they made a lot of sense for Russian building conditions.

In Stalino we saw an apartment house getting started. Not shown are the big cranes which lift these heavy prefabricated sections.



Finished apartments are usually about nine stories, have elevators, good size rooms, high ceilings. Stucco is often painted yellow.

Excellent feature is a pleasant green park area inside hollow square of apartment where children can play. This is in Moscow.

Kitchens in new apartments were bare. Families get gas stove, double compartment sink but no cabinets or other kitchen appliances.

Electric wiring, inside plastic tube, is first plastered to interior walls, covered with finished plastering. Most wiring, however, is left exposed.



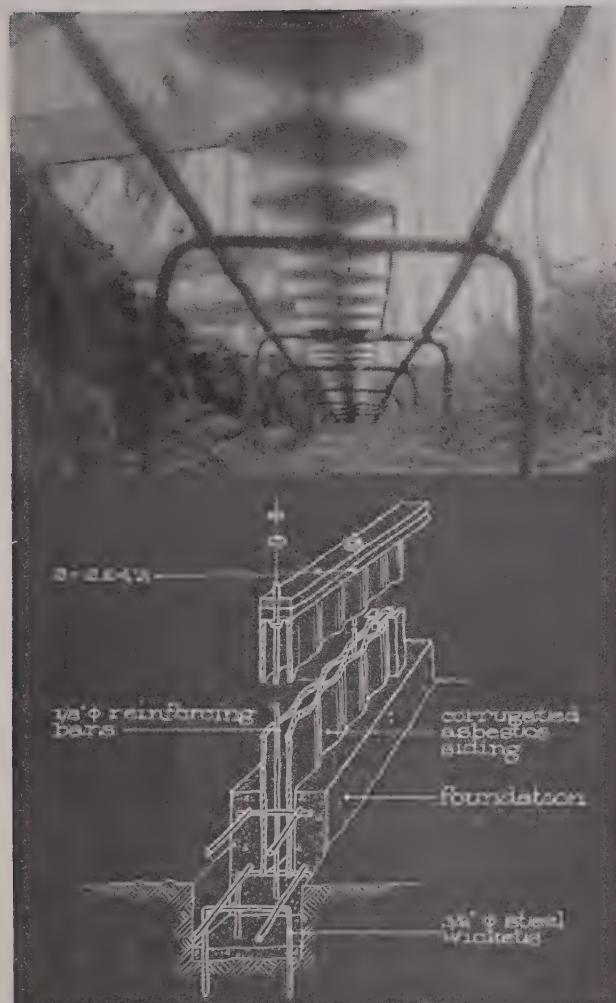
A model of their future city is proud possession of every town, shows careful planning. This one is at Kiev.

City planning offices have few problems as government owns land, does designing, and also all of the building.

Typical architecture of public buildings is mixture of old and new. This scene is in Leningrad.

Poor maintenance shocked us. This brick platform is typical, has crumbled away in only a few years.

3 MORE NEW WAYS



John Mazzotta

67

Corrugated asbestos siding
gets a new job to do

Homeowner Orlando Klein has risked every penny he can raise on a new way to make corrugated asbestos siding do double duty in every wall.

By using the siding as a form and pouring reinforced concrete in every seventh corrugation, he makes any other wall framing unnecessary. The result is handsome (see below) and Klein is sure it will be cheaper than hanging the siding on a wood frame. He also claims substantial wiring economies because his wall is so fire-resistant he needs no boxes around his outlets. He also says it is cheap and easy to insulate the wall with blankets of insulation hung between the inside and outside corrugations.

The walls are so light that they can be carried on wickets of $\frac{3}{8}$ " reinforcing steel, with the foundation poured around them (see drawing). The $\frac{1}{2}$ " reinforcing steel in the columns extends up through the double 2×4 " plate above, anchors it to the wall.

Right now Mr. Klein is in trouble because he can't raise the last \$1,000 needed to finish his house in Seagoville, Texas (pop. 2,000) and unless he finishes it, he can't get a mortgage. But Klein still has enough faith in this system to go ahead and apply for a patent on it.



TO BUILD BETTER FOR LESS

68

Aluminum pole holds wall plumb while bracing it

Most builders use "scrap lumber" to brace their walls during construction.

But smart San Francisco builder Andy Oddstad says lumber costs too much to treat any of it as scrap—especially the plate and rafter lengths used for bracing.

So Oddstad has developed (and is trying to patent) a set of lightweight aluminum braces that his workers can carry from job to job and re-use on hundreds of houses. First cost of each brace is \$5.50, but on volume production Oddstad figures they cut his lumber costs \$6 a house and save \$2 a house on labor.

The braces are nailed to the upper plate; the wall is plumbed in the usual manner. The braces are then secured to the subfloor. Rigidity of the braces and the secure nailing holds the wall plumb while ceiling joists are set in place.

The poles work extra well on above-ground-level construction, where the outside wall can be braced from the inside only.



69

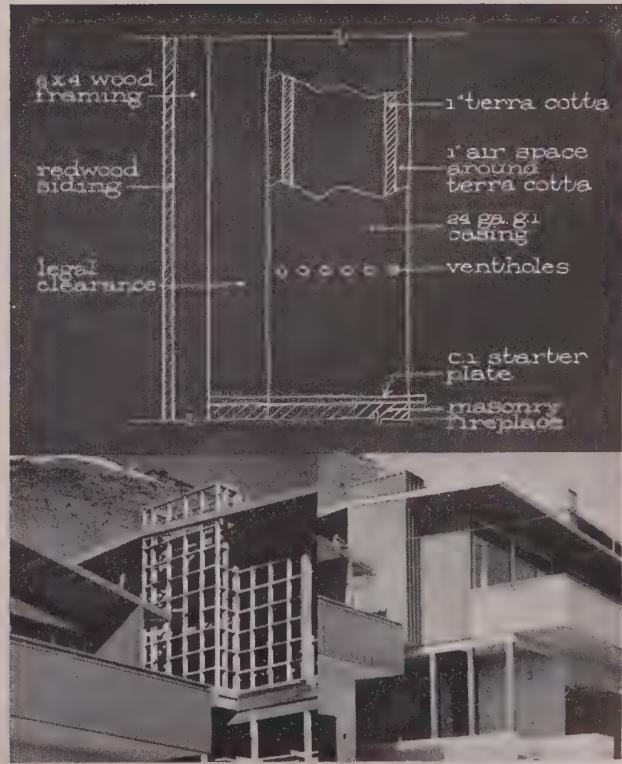
Patent flue, wood chimney cut fireplace costs

How can you get the economy of a patent flue without sacrificing the conventional appeal of an old fashioned chimney?

One good way is to build the chimney of redwood, which is so much lighter than brick that it needs no foundation. With a wood exterior, a second story fireplace can rest on a cantilevered platform.

The photographs show how well architects Campbell & Wong used patent flues in redwood chimneys on the houses pictured on pages 144 to 149. Builder William Blackfield figured they saved nearly \$400 on each uphill-side-of-the-street house, where they cut out the whole cost of a story-high masonry foundation under the fireplaces. They saved perhaps half as much on the downhill side.

Some codes (like San Mateo County's) won't allow cantilevered fireplaces.



Mortley Beer

Here are the first fast reactions to last month's editorial entitled...

THE SECRETARY OF THE TREASURY
WASHINGTON

BANKERS *Life* COMPANY

HILL MORTGAGE CORPORATION

W. A. CLARKE MORTGAGE CO.

COLONIAL MORTGAGE SERVICE COMPANY

LIBERTY NATIONAL
LIFE INSURANCE COMPANY

UNITED STATES SAVINGS AND LOAN LEAGUE

Columbia University
in the City of New York

THE MUTUAL BENEFIT LIFE INSURANCE COMPANY

THE PRUDENTIAL SAVINGS BANK

NATIONAL ASSOCIATION
OF REAL ESTATE BOARDS

DOVENMUEHLE, INC.

FEDERAL HOME LOAN BANK BOARD

CALIFORNIA FEDERAL SAVINGS

Let's do something about

MONEY!

For six years our industry has bounced from one mortgage crisis to another.

For six years we have listened to foolish talk—foolish talk urging us to have faith in the free market for money, foolish talk bidding us be patient and wait for added savings to provide the money we need, foolish talk suggesting we follow Mr. McCawber's example and wait for something to turn up.

For six years we have listened to wild talk—foolish talk demanding that the Federal Reserve buy more money, foolish talk about problems, wild talk demanding that the Federal Treasury buy through Fanny May all the 4 1/2% mortgages the banks and insurance companies do not buy, wild talk demanding, in brief, the free and unlimited con-

age of 4 1/2% mortgages at par.

For six years we have listened to wild talk, foolish talk, wild talk, but in six years nobody—but nobody—has done anything about it. Right now our mortgage money mess is worse than ever, with no relief in sight.

Enough is enough. We have had enough wild and foolish talk. We have had more than enough mortgage money trouble.

THE SCHENECTADY SAVINGS BANK

BANKERS TRUST COMPANY

THE FIRST SAVINGS & LOAN COMPANY

THE TITLE GUARANTY COMPANY

T. B. O'TOOLE, INC.

PIPESTONE FEDERAL SAVINGS

Eberhardt Company

CAPITAL FEDERAL
Savings and Loan Association

BAIRD & WARNER

THE GREAT-WEST LIFE INSURANCE COMPANY

HOME SAVINGS & LOAN ASSOCIATION JAMES W. ROUSE & COMPANY

OLD COLONY CO-OPERATIVE BANK

UNION FEDERAL
SAVINGS AND LOAN ASSOCIATION

THE
AMERICAN BANKERS
ASSOCIATION

This is a challenging editorial and though I cannot agree with a number of its statements, I feel that it should create constructive thinking on an important economic area.

G. W. HUMPHREY
Secretary of the Treasury

Of course I like it! It is very interesting, but why didn't you say something about the real answer to the problem and that is to unfreeze interest rates as far as FHA and GI's are concerned.

AKSEL NIELSEN, *president*
The Title Guaranty Co.

Your courageous editorial brings the money situation into focus. It demands the undivided attention of all segments of the housing industry so that a realistic re-appraisal of our industry's problems may be made.

MARTIN L. BARTLING JR., *secretary*
National Association of Home Builders

A wonderful contribution to thinking on the future market. Sure it will receive wide publicity and some controversy but it is a story which needed to be told and you've done a wonderful job.

HARRY HELD, *vice-president*
Bowery Savings Bank
Chairman, Real Estate Investment Committee
Ass'n of Mutual Savings Banks

By and large I agree with everything you have said, and I think it is a fine article and should be very well received.



While your arguments slightly favor the builders' point of view, this is only natural. The mortgage bankers have certainly felt the decreased allocations for mortgage investment purposes.

We believe in a stable dollar, but nothing helps our business more than an easy money market.

M. T. MACDONALD, *past president*
Mortgage Bankers Assn.

In your usual hard-hitting, free-swinging style, you have faced up to many of the hard facts about the money market. It seems clear to me that we have been, for some time, borrowing faster than we are saving. Our aspiration for things to build exceeds either our willingness or our capacity to save. This inevitably leads to congestion in the money market such as we are now experiencing.

Your are wise to point out that there is no simple-pat solution. The problem must be attacked along the lines you suggest and, at the same time, we must recognize that higher interest rates, shorter terms and stricter underwriting standards are an inevitable product of the present money market. This may not be bad at all. It may be very good, in fact. Higher interest rates means a higher return on savings and thus tend to increase the quantity of savings. Stricter terms tend to increase amortization and thus enlarge the flow of money back into the pool for reinvestment. More rigid underwriting requirements may eliminate many marginal projects which, at this time, it would seem reasonable for us to pass up.

You perform a great role for the home building industry as its philosopher, advocate and conscience.

JAMES W. ROUSE, *Baltimore*
Member, President's 1953 Housing Policy Committee

"We need a broad study of money and banking"

Your editorial is interesting, constructive and important.

The real problem is where the American people and American business can get the tremendous credit and capital to sustain this ever-expanding economy, to sustain its present and its future growth. Bringing back the ratio of savings to our gross national product to its high of '53 will not be enough. Our dynamic economy demands more and more capital investment, not only because of the growth of our population but perhaps even more because of our fabulous technical advance and the needs as the result of our present research.

I am heartily in accord with Allen Sproul, past president of the Federal Reserve Bank, that we need a broad national type monetary and banking inquiry. We have had no such comprehensive study and investigation since the Commission of 1911 which led to the formation of the Federal Reserve system, and much water has gone over the dam in the past 45 years. Out of such a study may come new methods to raise capital and new devices to save funds. It is important, as you point out, that we constantly seek a solution to these problems, so that we can continue to meet the demands of our new American capitalism.

MILFORD A. VIESER, vice president
The Mutual Benefit Life Insurance Co.
Newark, N. J.

Your editorial is wonderful.
Can we get 5,000 copies to distribute to each of our members?

NORMAN STRUNK, executive vice president
US Savings & Loan League

"Urban renewal can reduce money needed for new homes"

You have dramatically stated the problem and given money lenders, builders and many others, a lot of things to think about!

I cannot say I am happy over every line in the editorial but the entire editorial is constructive and will make many of us think, if only for the purpose of disputing some of your conclusions and adopting others.

Here is the important factor your editorial omitted: Our Build America Better program feels that today's six to eight million substandard units should not be written off as useless and completely discarded. We believe a large percentage of them are worthy of rehabilitation at a cost substantially less than it would cost to replace them. This program might lessen the demand for new money enough to make the Federal Reserve's attempted credit control unnecessary.

I have sometimes been urged to blame the current alleged tightness of money upon alleged excessive demands of industry for a disproportionate share of the available pools of funds, but I have refused to do so, feeling we should make the case for home building and home rehabilitation on its own foundation rather than attack any other segment of the economy.

I do not altogether go along with you on the premise, as I understand the editorial, that housing loans should be limited to 20 years but I do go along with you 100% in your feeling that every conceivable inducement should be offered to the borrower to repay his obligation so as to get out of debt as quickly as possible and create additional funds through revolving this capital for additional new construction or rehabilitation.

For FHA this would mean eliminating the prepayment penalties and setting higher interest rates on longer maturities. Both these steps would, in my opinion, tend to encourage prepayments.

CLARENCE M. TURLEY, president
National Association of Real Estate Boards



By far the most comprehensive, factual, hard-hitting diagnosis of the home building industry's anemic condition. It will furnish an invaluable guide to all segments of the industry. This is your greatest contribution to home building (and you have made many).

ROBERT GERHOLZ, past president
NAREB and NAHB

I agree with all of the things you say and it is certainly a masterpiece of summation and constructive suggestion. Over the years we have defended our inconsistencies with some success, but I dream of the day when we will not be condemning too much government in housing with one breath and in the next breath asking more government help.

It is my conviction that the FHA and the VA interest rate should both be increased immediately at least a half per cent. Unless our loans offer a yield enough higher than liquid investments, we must always be dependent on semi-subsidies of various kinds.

I am sure your courageous and factual statement is a milestone on this basic problem. It is another evidence of the statesmanlike leadership you give our industry.

FRANK W. CORTRIGHT, founder
National Association of Home Builders

I cannot help realize from the development of your editorial that here is a challenge that can be answered only by the coordinated efforts of all elements of finance. There is no room for bickering and jealousies, nor for the rather fantastic destructive feeling that seems to follow the field of finance. This is a challenge that can be met only by complete co-ordination of all the brains and abilities of everyone in our industry, from the labor unions to the top thinking of the Federal Reserve System. I know of no better impartial point for such a program to start than your own organization. I trust that our United States Savings and Loan League will be called upon by you to lend the best of its abilities to this problem, and that other affiliated interests will be equally broad in their approach to a staggering challenge.

I agree with you that time is running short, but men working in a common cause can accomplish amazing results, and I trust that your interest will be continued to the end that a real, active coordination of all elements involved can be brought together.

JAMES H. JEROME, Executive Committee
US Savings & Loan League

"Commercial banks could lend \$8 billion more on mortgages"

After reading your editorial Let's Do Something About Money I am more optimistic about housing finance than I have been for some months.

It was a courageous act on your part to lay the facts of life on the line, and you are talking to the right people. When we have tried to say some of the things your editorial expresses so well, we have been often attacked by the building industry.

You have produced the most convincing job that I have yet seen—better than anything we have done.

As you know, the commercial banks in recent years have increased their ratio of mortgage loans to time deposits at a greater rate than any other lending institutions. At the present time the commercial banks hold about \$22 billion of mortgage loans. They could still lend another \$8 billion before they reach anywhere near their lending limits.

The commercial banks attitude toward mortgages has been improving and would improve even more if we had a realistic rate, preferably a flexible rate, on insured mortgages. I believe their attitude would be still better if the builders would recognize the main points in your editorial, such as the desirability of paying off the mortgage as fast as possible according to the abilities of the homeowner.

It is my understanding that the pay-off in the commercial banks is about \$2 billion a year. If we could, with the help of the builders, bring about a realization that the most favorable terms are those where the mortgage is paid

off fastest we would, of course, have an even higher pay-off than \$2 billion a year. That would be true of the other lenders as well.

Your editorial mentions that, in considering who should get first crack at new money, the stock answer has always been that only short term borrowers should be allowed direct access to money created by credit expansion. The editorial also states that this answer may suit the commercial bankers.

I think I ought to say that we have recognized for a long time that the savings and the mortgage business go hand in hand. The commercial banks that are doing the best savings job are, in most instances, lending a higher ratio of their money in mortgages, although few are up to the legal limit. I think this attitude was evidenced by our efforts to get a bill through Congress giving national banks the right to make loans up to 66 2/3% of appraised value rather than the previous limit of 60%.

I believe there is a greater mortgage potential in the commercial banks than in the competitors, especially now that the commercial banks are aggressively seeking savings deposits. In this business I should like nothing better than to see a complete understanding of each other's problems on the part of the builders and the bankers.

Your editorial is a wonderful beginning and, as I said earlier, I am very optimistic.

RAY DUNKERLEY, *senior deputy manager*
The American Bankers Assn., New York City

You have ably and courageously outlined this involved and complex problem which threatens to throttle the home building industry.

It is foolish to speak of building a million plus houses a year unless money is provided to do so. You have approached the problem on a practical and realistic basis. I am sure the editorial will provoke thought and discussion which all of us in the industry hope will result in the development of some solution to this critical money shortage.

I am sure that the industry as a whole is grateful to you for your splendid analysis.

FRANK P. FLYNN, JR.
Executive vice president
National Homes Acceptance Corp.

Just finished reading your article on the mortgage market situation. It is both timely and courageous and you are to be sincerely congratulated for your fine contribution to our industry.

My heartiest congratulations.

STANLEY M. EARP, *president*
Citizens Mortgage Corp., Detroit

Do I like it! I love it!

Your editorial makes more sense and tells more plain truths than any I have read. I hope every mortgagee and home builder reads it.

If all the forces interested in making more money available to build more houses would join hands to change FHA mortgages to a variable interest rate, we would be off to a good start. It would end complaints of builders against mortgages which are not justified and are a psychological drawback—if not an actual one in some cases—on new construction. It would encourage mortgagees to step up the payment of present mortgages (which would be carrying a lesser rate), thus putting more money into the mortgage stream.

We, of the US Savings & Loan League, would be most happy to participate in such a program, along with many other forward steps which we are now taking, such as trying to transform the Home Loan Banks into a major reserve credit system. By the way, there is a technical error in your statement concerning the number of years the Federal Home Loan Bank System has been in existence—it should be 24 years.

HENRY A. BUBB, *past president*
US Savings & Loan League
Chairman, Legislative Committee

The National Savings & Loan League at its Houston meeting in Oct., 1955 took the first industry action to make The Federal Home Loan Banks better credit instruments, your editorial to the contrary notwithstanding.

HAROLD P. BRAMAN, *executive manager*
National Savings & Loan League

I cannot say that every line makes me happy, but on the whole I think it is excellent. A lot of it is excellent philosophy as well as policy.

ERNEST M. FISHER,
Professor of Urban Land Economics
Columbia University.

Congratulations! You did it again.

Your August editorial on money is extremely well done and I sincerely hope that the joint effort of you and Miles Colean causes some constructive thinking among your readers.

Keep up your intellectual and practical leadership.

J. HOWARD EDGERTON, *past president*
US Savings & Loan League

. . . Certainly a forthright and stimulating discussion, and I must say that I concur wholeheartedly with your tripartite conclusions.

I have been concerned as apparently you have with our tendency to float away our problems on a sea of easier and easier lending terms. What has troubled me is the absence of forthright analysis and leadership on the other side. This is a very important problem, and I certainly think your discussion is a very useful contribution which I hope will stimulate the study of the problem.

ROY L. REIERSON, *vice president*
Bankers Trust Co., New York

Your editorial has puzzled me considerably, so my reactions are rather mixed. It seems to contain some economic contradictions and circular reasoning.

You favor a large increase in mortgage funds; yet you admit savings cannot be increased enough to provide such funds in large quantity.

You want all the credit expansion the economy can stand without inflating prices; yet I'm sure you know our economy is straining against capacity ceilings, so any credit expansion above a sustainable level would quickly be reflected in rising prices. This is what I call circular reasoning, and I assure you I don't mean it impolitely.

Further, the editorial complains about restricting bank credit to short term borrowers. This bothers me greatly, for to use bank credit for a large amount of mortgage money would inflate prices and costs and make worse the cost situation you deplore. . . .

As I see it the only way a reorganized Home Loan Bank system could make large amounts of mortgage money available would be to borrow heavily to supply credit to its member organizations. If such borrowing were from banks it would be inflationary. If it were from savers it would only shift the competition for savings.

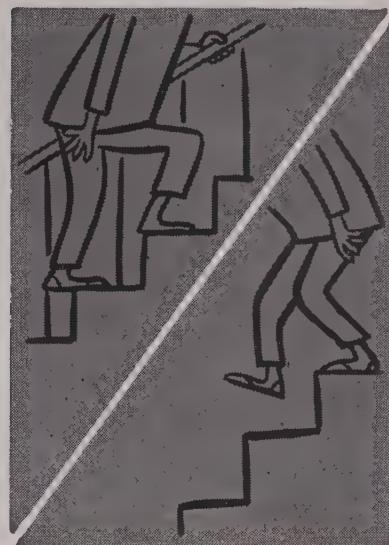
Lowering costs is a noble goal and I favor it, but I don't believe the construction industry has much control over labor or material costs; so short of a revolution in housing construction methods cost savings are not likely to stretch the current pool of savings to finance many additional houses.

On the whole, I believe your editorial is inflationary in its approach. Certainly there can be no escape from inflation if the supply of credit is increased when the economy is working at full capacity. Again it seems to me your editorial is inflationary when you plead that something be done for the six to eight million families living in dilapidated units. Only through very easy credit and attendant inflation could mortgage money be made cheap enough at this time to build and finance homes for these families, who at best would be marginal borrowers.

R. B. PATRICK, *financial vice president*
Bankers Life Co.; Des Moines

continued on p. 180

Which would you choose for your own home?



ONVENTIONAL SWITCHING with the tedious bedtime job of turning off forgotten lights in the attic, basement, and garage



REMC CON SWITCHING with a REMCON master switch panel at bedside that turns off lights upstairs, downstairs, everywhere!

For as little as \$50.00, you can speed up the sale of your houses by giving your customers what they want —what you yourself would like to have—all the step-saving convenience of REMCON switching. • Bedside control of lights throughout the house is only one of the ways REMCON can add exciting sales appeal to any house. From the same panel, the home owner can flood house and grounds with light to frighten away would-be burglars. • In the kitchen, silent REMCON convenience switches save the woman of the house

hundreds of steps a day. And, thanks to REMCON, you can economically place switches at two, three, four or more entrance points to the living room. • The development of simplified REMCON low-voltage switching opens a new era in home lighting. Never before has it been possible to add so much to your houses for so little. • For more information about REMCON, speak to your electrical contractor or write to... Dept. RB-61, Pyramid Instrument Corporation, 630 Merrick Road, Lynbrook, New York.

REMC CON low-voltage convenience switching sells houses.

75 years ago. Fourth best is flexible conduit; fifth is thin-walled rigid conduit; sixth is heavy wall rigid conduit.

All are safe. All are accepted by the National Electrical Code—and there is no excuse for any local electrical code whose safety requirements are in excess of the national code.

Today backward codes and restrictive practices make about one house in four pass up the economy of nonmetallic sheathed cable and compel about one house in 20 to waste a lot of money for very little benefit on one of the three types of conduit.

best conductor for the all-electric house of 1,200-2,000 sq. ft. will usually be:

Two 3-wire No. 12 circuits for general purpose.

One 3-wire No. 6 circuit for the range

One 3-wire No. 10 circuit for the water heater*

One 3-wire No. 10 circuit for the dryer and washer
(see item 176 below)

One 3-wire No. 12 appliance circuit in the kitchen-dining room area

One 3-wire No. 10 circuit for central air conditioning
(or 2-wire No. 12 for a fuel-burning furnace)

One 2-wire No. 12 circuit for the freezer

The panel board for these circuits should permit at least two and preferably five future additions.

best place to run the general purpose wires is not through the ceiling but through the walls at base plug level, because the average house has four times as many base plugs as ceiling outlets.

best wire size for general purpose electricity is No. 12 instead of No. 14, for it takes too many small circuits to meet today's much greater current demand with the small wire which was most economical for yesterday's much smaller demand.

No. 12 wire carries 33% more current (20 amps. vs 15 amps.) for only 20% more material cost and less than 10% more labor cost.

But 95 new houses out of 100 still use No. 14 wire for most of their general purpose circuits!

best thing to do with No. 14 wire is not to stock it or use it. Progressive codes are beginning to forbid its use. It costs so nearly as much as No. 12 (which carries $\frac{1}{3}$ rd more electricity) that it will not pay electricians to carry a double stock so near the same size.

best general purpose layout for 1,200-2,000 sq. ft. houses is a split ring of 3-wire No. 12 at baseboard level, with 2-wire No. 12 taps into the partitions and the ceiling. This will make 240 v. available in every room and carry 9,600 watts—a comfortable margin over the 4 watts per sq. ft. recommended by the Adequate Wiring Bureau. This margin is big enough to handle room coolers, bathroom heaters and similar appliances without a separate home run, whether they use 120 v. or 240 v. It is also big enough to handle the dishwasher and garbage disposer if they are located along the outside wall.

In two story houses these two 3-wire No. 12 circuits can be run up on either side of a door and continued around the perimeter of the second floor.

best electrical connections are the new push-in or pressure lock type that came on the market three years ago. These are so much easier to use that they should be made much easier to buy. For

* Unless the local utility rates favor off-peak water heating, in which case two 2-wire No. 12 circuits may be needed.

comparable quality push-in devices cost no more than the old-fashioned screw type, but they are not yet available in the cheapest grades.

Today not one house in ten takes advantage of the saving these new pressure lock devices offer.

best thing to do with all the old-fashioned wiring devices whose wires had to be looped around a screw is to stop making them, stop distributing them, stop selling them and stop installing them. The wiring industry should not be plagued with a double production problem and a double inventory problem waiting for behind-the-times users to learn how much easier (and therefore how much quicker and cheaper) it is to use the new push-in devices.

Solder connections cost far more than they are worth. Only backward codes require them. Utilities use them only for high voltage splices in cables.

best devices to use are those that will stand up in service. They are the cheapest in the long run.

In receptacles the main difference between the better grades that will stand up and the so-called "competitive" grade that may not stand up is that in the competitive grade the plug makes contact on only one side of the plug cap blade; in the better grade the blade fits into a V or U and makes a firm contact on both sides. The better contact thus provided operates cooler, maintains the spring tension, and so assures longer life. The competitive grade, operating with more heat, loses tension and so increases the frequency of arcing. This arcing uses up the contact metal within a fairly brief time, making it necessary to replace the device at a labor cost seldom less than \$2. The competitive receptacle costs the trade about 13¢. The better grade is priced at about 22¢.

In switches the difference is much the same, for in the better grades (easily identifiable by the underwriters' laboratory "T" rating stamped on them) the switch arm makes a double contact when closed; in the competitive grade only a single contact. Mercury switches and silver contact AC rated switches will last as long as the house itself.

Only the better grades meet the Federal wiring requirements, and it would be a fine thing if FHA would bring its wiring MPR in line with the Government's own minima. It would also be a fine thing if the Adequate Wiring Bureau withheld its insignia for houses using the "competitive" grade.

best convenience outlet to use is always duplex or triplex.

best outlet boxes to use with 3-wire No. 12 circuits are those one size larger than usually employed, for it wastes time to cram three heavier wires into the small boxes designed for two No. 14 wires.

Best box size on a 3-wire No. 12 circuit is 3" x 1 1/4" x 2 3/4" unless a tap is to be made. Best box size now available for use where a tap is to be made is 1 1/2" x 4" x 4", but this size needs further study by the manufacturers, because it is not well adapted to dry wall construction if a single gang cover is used and two gang covers for a duplex convenience outlet are not suited to ordinary household use.

best location for an outlet is near the end of a wall space (or at any rate away from its

continued on p. 176



Vinyl tile flooring...

Up-to-Date Styling—Years-to-Come Savings

Flooring made of BAKELITE Brand Vinyl Resins gives you a greater selection of colors and patterns that satisfy buyers' desires. You not only have more to please them with, you can assure them that the lustrous beauty of flooring made of BAKELITE Vinyl Resins will last years longer.

Remember: because of BAKELITE Vinyl Resins, the impervious nature

of this flooring shuts out soil and wear, resists chemicals, cleansers, scuffs and scars. Therefore, you can assure excellent economy and very low maintenance.

These are attractive advantages for any house. You can provide them easily by making "Flooring made of BAKELITE Vinyl Resins" your standard specification.

*Another way
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Also see pages 177, 179, 181, 183, 185 and 187.

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center) where it will be less likely to be blocked by furniture.

best positioning for outlets on opposite sides of an interior partition is back to back, so they can use the same box.

best way to provide for future base plugs (where surface raceways are not used) is to leave a 2' loop of slack in the wire between wall outlets (unless the outlets are already spaced close together). Codes which restrict this practice should be changed.

Two feet of 3-wire No. 12 Romex costs less than 20¢ at trade prices, less than \$3 for a whole house wired with a base plug for every 12' of wall (the adequate wiring minimum standard). It will often save the homeowner more than \$3 on each base plug added later if the original electrical installation provides enough wire wherever a future outlet is likely to be wanted so new wire need not be run through the studs from the nearest connection.

best way to splice (if you must) is to use a mechanical splicing connector.

best way to drill 150 holes in the studs for a perimeter ring with branches into the partitions is to predrill all the studs at the same time they are being precut. Holes 1" in diameter will not materially affect the strength of a 2" x 4" stud; they are just as easy to drill with a gang drill; and cable can be threaded through them a lot easier and faster than through the $\frac{5}{8}$ " holes electricians now drill for themselves with portable power drills.

best standard height for the holes would be 10" up from the plate (about 12" up from the floor) to enter outlet boxes centered at the recommended 12" above the floor.

best place to cut general purpose cable to length and strip to the individual wire is at the factory; second best place is in the shop (if the local unions insist on doing the cutting and stripping locally).

Housing components are standardizing so fast on a 4' module that it might save on-site labor and waste very little material to precut the wire for base plug service to standard lengths for spacing on a 4' module; i.e., 4' plus enough slack; 8' plus enough slack; and 12' plus enough slack. Quite a few cost-conscious contractors already practice this economy on large projects.

best way to tighten the hundreds of screws in residential wiring devices is with a ratchet screwdriver, so one motion will do the work of ten. But very few electricians use them.

best way to run circuits around at base plug level would be through surface raceways if they were widely enough used to bring down their price. With careful planning they can even be made competitive at today's price of 40¢ a ft. (including factory prewired duplex receptacles every 30"), according to builders and electrical contractors who have used them. They are definitely the cheapest way to add more base outlets above finished ceilings in existing houses. They are also the cheapest way to provide outlets in nonbearing partitions erected after the perimeter walls are finished. Reason: they

can be installed and inspected at the same time as the finished wire for the perimeter ring, whereas branches run through the partition studs would require an extra call from the electrician and an extra inspection. The thinness of these nonbearing walls (1 $\frac{5}{8}$ " studs instead of 3 $\frac{5}{8}$ ") is an added reason for surface circuits.

Since 1955 surface wiring systems have been approved for wiring outlets on both sides of the partition from the same circuit if the builder prefers not to install a raceway on both sides.

best way to wire a single room switch is with a 120 v. circuit, for a transformer and relay for low voltage cost far more than the labor and material saving offered by substituting bell wire at 1 $\frac{1}{2}$ ¢ a ft. for Romex at 4 $\frac{1}{2}$ ¢. But . . .

best way to provide multiple switching or remote control switching is with a low voltage system. Best way to mix conventional and low voltage systems for greatest economy is to use relays with built-in transformers at lighting fixture and run low voltage circuits to the switches; but for more elaborate systems it will usually be cheaper to install a single, larger transformer (trade price \$10 to \$15) to supply the group of relays (trade price \$1.15 each—one for each lighting circuit).

best way to wire the kitchen-utility room appliance area (which uses about five times as much connected load as all the rest of the house combined) is to run a surface metal raceway around the walls above counter level, big enough to hold all the wires which are now or may later be needed. For built-in kitchens it could be designed to do double duty as a splash board. In other kitchens it could be attached directly to the studs above splash-board height before the dry wall and surfacing are applied. It should be so designed that convenience outlets can be installed where needed.

Such a raceway would cut the first cost of adequate wiring by making it unnecessary to include in the initial appliance area wiring any other provision for future appliances. It would cut the cost of later additions to the appliance area wiring by making them easy to install without fishing heavy wires through walls and ceilings.

The surface wiring channels now used in residential living areas are too small to hold all the heavy wires needed in the appliance area, but the channels made for industrial use could easily be adapted. In a big enough size their trade price runs about 41¢ a ft. unwired.

best way to supply a clothes washer and separate dryer is to run a 3-wire No. 10 circuit (capacity 7,200 watts) to the dryer and tap this circuit with 2 No. 12 wires through a 15 amp. fuse or breaker for the washer. The dryer uses 4,500 watts; the washer only 700. They are usually installed side by side.

best place to wire appliance combinations, furnaces, and central cooling systems is at the factory, so they will require only a single connection to install. Some manufacturers are already doing this and others should follow. One builder saved \$29 per house by persuading his furnace supplier to prewire the furnace, blower and control relay for a single connection.

The cost of adequate wiring is mostly the cost of carrying current to the appliances and mechanical

continued on p. 178



Tile-smart as can be...

for a fast, positive decision on the whole house!

Smart, with stamina. Warm and easy, with a party-dazzle—the newest kitchen has to be all that. Nothing captures all these qualities as completely as tile made of BAKELITE Styrene Plastics. The variety of colors and sizes and types is a spring-board of ideas, adaptable to any architecture. And, these tiles are sur-

prisingly low in cost, easy to install.

BAKELITE Styrene Plastics give tile all these features: Resistance to acids and alkalies. Easy cleaning, safe with soaps and detergents. Clear and uniform colors, right to the back. Resistance to denting, chipping and crazing. Meets RHA requirements.

Ask your dealer for wall tile made of BAKELITE Styrene Plastics which meet the industry's standards. It's eligible for FHA loans.

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equipment. Only two "3-wire No. 12" circuits are needed to provide more than adequate wiring outside the appliance area.

best fuses to use in motor appliance circuits are the time delayed type, which are designed to take without blowing the three-times-as-heavy starting current of the motor. They cost only 5¢ more, and they will give the builder many a call back.

cheapest raw metal for conductors is aluminum. Volume for volume it costs only 1/6 as much as copper; allowing for the larger wire size aluminum usually requires, it costs only about 1/4 as much. This year, for the first time, the National Electrical Code will give a complete set of current ratings for aluminum conductors in all sizes in all types of insulation.

Aluminum is now definitely cheaper than copper for the heavy wire used for 100 amp. service drops and is fast coming into general use for this purpose. It is almost certainly cheaper now for the wire in the service entrance and it may soon be cheaper for the No. 6 wire used for stoves and sub-feeders.

Four reasons have delayed the use of aluminum conductors for wiring houses:

1. Aluminum wire is too stiff to loop around screw connections. (This objection is ended by the new push-in devices and by the Underwriters' Laboratories' new requirement that solid aluminum wire can be only 3/4 hard.)

2. Aluminum and copper are subject to corrosion from electrolysis wherever they touch in the presence of oxygen and moisture. (On No. 6 or heavier circuits, where aluminum is now being used, this can be prevented by interposing a plating of one or more other metals. On small circuits no special protection against electrolysis may be needed.)

3. Pure bare aluminum oxidizes the instant it is exposed to air, and the aluminum oxide formed has very high resistance so that somehow or other it must be pierced to establish a satisfactory electrical connection. (This objection can be met by coating the aluminum with special grease to keep out the air and by applying abrasion and pressure at the connection to pierce the oxide.)

4. Aluminum wire of a given rating costs more to insulate than an equivalent copper wire because it is thicker. (This cuts the material cost differential in favor of aluminum to a figure nearer 25% than 75%.)

The labor costs for aluminum wiring will always be more than for copper, because it is larger in diameter and because it takes time to clean the aluminum thoroughly and to get a good contact and it takes time to apply just the right pressure in each device (too much will make the aluminum flow; too little will not make a good enough contact). The lesser weight of aluminum cancels out some of this extra cost.

For wires smaller than No. 6 the higher labor cost will probably be greater than the material saving; but for No. 6 and over aluminum should be cheaper when contractors learn the slightly different techniques needed to use it and manufacturers give us the slightly modified devices needed to handle either aluminum or copper.

To cut the cost of adequate wiring we need teamwork from start to finish



BOGARD: One house in ten has an electric dryer.



WEIST: We had to educate our contractor on how to use surface raceways economically.

We will not get the wiring we need at the costs we want until we get better understanding and team work between builders, architects, electrical contractors, electrical dealers and electrical manufacturers. That means specifically:

1. Architects and builders must learn a lot more than they know now about wiring. They must learn what costs more and what costs less. They must learn to work closely with their electrical contractors to develop an economical specification, instead of asking the contractor to make the best of an unplanned layout. The time to save money on wiring is before the electrician comes on the job.

Many a builder who saves \$3 or \$4 with 11¢ devices that may not last a year wastes \$100 by not preplanning for wiring economy.

2. Electrical contractors must give their customers an evident incentive to write an economical wiring specification, instead of bidding the same per outlet price whether the layout is economical or not.

3. Electrical manufacturers must study the contractors' methods and problems more closely. They must take more responsibility for developing the materials and devices contractors need to do the job more economically.

4. Electrical distributors and dealers must take more responsibility for stocking and selling devices that will help cut costs, instead of waiting for contractors to demand them. (For example, it is three years since the manufacturers offered the great economy of pressure lock (push-in) connections, but many wholesalers still do not carry them.)

5. Electrical contractors must learn to take quicker advantage of the new labor-saving methods and labor-saving devices (like push-in connections) that make better wiring cost less./END.



ZERBLE: Surface raceways give you a wonderful chase.



W. W. SMITH: We must anticipate new appliances that we can't even visualize today.

A Glowing Ceiling puts a gleam in her eye!

This bathroom is 15 feet from the nearest exterior wall, yet every buyer will remark on its lightness. Made possible by fluorescent lighting hidden by panels of BAKELITE Rigid Vinyl Sheet.



Soft, glareless light in a center hall, a den, a basement or an interior bathroom may make the difference in promoting your houses.

How is it done? Milk-white plastic ceiling panels—made of BAKELITE Brand Rigid Vinyl Sheets—shield continuous fluorescent strip units that give lighting as close to daylight as possible. And, there's no color distortion.

The shields have other advantages, too; high light transmission, high resistance to warping, cracking or discoloring with time.

Finger marks, creams, soaps and cleaning materials won't harm them. In fact, they can be cleaned in soap and water whenever necessary. And, your cost is much lower than you might expect.

Take a look at your house plans. Are you going to save by locating baths and halls away from windows? Is your floor plan going to be more compact and more economical? Then investigate hidden light sources . . . made possible with BAKELITE Brand Rigid Vinyl Sheet. See your lighting contractor or write Dept. TD-78.

*Another way to
build better with...*



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First fast reactions
to last month's editorial:
"Let's do something about money."

Chapters could be written on practically every paragraph in the article, but I think the most important statement is:

"Our industry does not want to pay as much net interest as the other borrowers pay. That makes us low man on the totem pole."

If we could work it out so that FHA and GI home buyers could compete for money in the open market, I believe we would go a long way toward solving the problem.

EHNEY A. CAMP, JR., vice pres. and treasurer
Liberty National Life Insurance Co.
Member President's 1953 Housing Advisory Comm.

You have dramatized the situation and the shortage of money very effectively. Such a clear-cut statement, even without a cure, is helpful to any solution because it stimulates a proper and eventual solution.

We can do at least two things which you did not mention:

1. Get a greater share of the available credit by tapping new sources like pension funds and foundations. I am also referring to the method employed by the Investors Central Management Corporation to entice these funds into the market.
2. Obtain greater down payments.

GEORGE H. DOVENMUEHLE, president
Dovenmuehle, Inc., Chicago

This is a fine contribution and a splendid presentation. And your arguments are sound.

For the security of the country I would concur wholeheartedly with the fact that something must be done to keep the cost of land within reasonable bounds, and I most heartily approve your idea of cutting costs.

I also agree that a more suitable secondary mortgage market is essential. I don't know whether the Home Loan Bank would be that agency because it is not sufficiently capitalized to serve that purpose. You have undoubtedly noticed that a committee has now been appointed by the Banking & Currency Committee to study the entire banking situation, and I am sure that the savings and loans and the Mutual Savings Banks will both present a good case for an agency which will provide those institutions, already heavily invested in mortgages, with needed liquidity so that they might further expand their investments in "long terms."

But if we want to sell houses on as large a scale as the need requires, we will have to keep the monthly payments low. If we try to follow a 20-year mortgage pattern, I would say that 40% of the applications we approve today would have to be declined because of shortage of income.

F. V. GOESS, president
The Prudential Savings Bank, Brooklyn

I must say that your questions and answers are very thought provoking. They are especially interesting to me, since I have had the privilege of being chairman of our Federal Home Loan Bank Committee, and so many of the things you bring to the attention of your readers certainly are borne out by the facts and figures.

There was, however, an absence of two items: one is the unrealistic interest rate on FHA and VA loans in this time of tight money with the rate the same for 15, 20, 25, or 30 year paper. While money rates were going up, FHA and VA were increasing the term of their loans, which is in effect cheapening money when actually money is getting tight.

Also, you did not bring out the question of how certain areas were able to get high enough appraisals to allow for fees, commissions and discounts when other areas of the country seem to be operating pretty close to par on both VA and FHA loans except in cases where they make their purchases in the outside market. These are two items which are very rarely spoken of but have a considerable effect to the lender and the builder in the areas in which they operate.

The article is excellent, as usual, and should be read by all in the home building business in order that each segment will appreciate the other.

RALPH R. CROSBY, past president
US Savings & Loan League

... Excellent!

Not every line of it makes me too happy, but telling the truth has never hurt anyone.

Congratulations on the forthright position you have taken.

KILGORE MACFARLANE JR., president
The Schenectady Savings Bank

I passed it around to my associates for comment. Our consensus is: although we may not agree with everything you say, we must agree that everything you say is sound and constructive.

It has been my privilege as president of the Ohio Savings and Loan League to make many recent talks. On some of the topics you covered, and I did not receive agreement from everyone either.

I sincerely hope your editorial will create comment and constructive criticism, because you have made a very fine analysis of the problems facing all institutions that handle money.

FRANCIS L. VESY, president
Ohio Savings & Loan League

... One of the finest treatments I have ever seen, and I know that most of the more progressive people in the industry will agree wholeheartedly.

I would like to help the cause along a little by placing a copy in the hands of a number of my friends and would greatly appreciate it if you would send me two dozen copies.

Congratulations for an article which, I believe, is of the utmost importance today.

WARREN STEINER, vice president
Home Federal S. & L. Assn. of Cincinnati

... An excellent editorial.

I agree with most of what is said and I believe you are performing a real public service in saying it in plain words that everyone in the industry should be able to understand.

There seems to me to be only one important omission, i.e., any statistical data which would give the reader some idea of the present size of the mortgage money problem. It might well be pointed out that real estate mortgages "gobbled up" over \$16 billion last year (1955 net increase in mortgage debt)—a sum nearly equal to the entire net increase in the supply of funds available for investment from all the life, fire and casualty insurance companies, the mutual savings banks, the savings and loan associations, the corporate pension funds and the state and local government retirement funds.

Or to put it still another way, this is the third year that the net increase in mortgages has been about half of the total net increase in funds available for investment from all sources.

If you have any extra copies available, I would very much appreciate having copies to send to our top investment officers.

L. DURWARD BADGLEY,
director of real estate & Mortgage Research
Mutual of New York



Leonard W. Besinger, Carpenterville, Illinois...

"7,000 homes with polyethylene moisture barriers"

**". . . plus 5 school buildings, 102 stores
forming the world's largest shopping
center under one roof"**

"We wanted no part of old-fashioned materials. Polyethylene cuts laying time 50% . . . we have no waste due to cracking and tearing . . . and we do away with equipment necessary to seal joints. Polyethylene stays moisture-free, never gets saturated. And, we exceed the minimum requirements of both VA and FHA."

"The buyer is given advantages in health

and upkeep", said Mr. Besinger, "no housewife wants to look at sweaty walls with streaks or blisters, mildew on furniture or rugs. Polyethylene . . . assures no condensation even with contact tile floors."

Have you investigated using moisture barriers of film made of BAKELITE Brand Polyethylene? Or, its applications for dust barriers, covering equipment and stored materials, covering uncompleted windows in bad weather? Your supplier has full information, or write Dept. TE-78.

***Another way to
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Levitt jumps to \$30,000 houses on main line tract

The country's biggest builder, fast-moving **Bill Levitt**, plans his first big jump into the luxury house market.

He bought the 145-acre Cassatt estate near Villanova, right in the heart of Philadelphia's plush Main Line. There he plans to build a "much higher type" house than his Bucks County models. Reported price: \$30,000.



LEVITT OF LEVITTOWN, N. Y., PA., N. J.

Levitt asked Radnor Township to rezone the whole tract for half-acre lots, but says his smallest site will be 27,000 sq. ft. (most will be 30,000 sq. ft.). He also asked the township to forego a 12-acre park planned for his land.

A stormy public hearing was expected Aug. 27. More than 400 irate neighbors turned out when the previous owner tried to get the zoning cut from the original one-acre restriction.

Levitt still has several thousand houses to go in Levittown, Pa., and is just getting started on his new 4,000 acre Levittown, N. J., but one Philadelphia home builder predicts: "He'll have less trouble selling \$30,000 houses on the Main Line than \$20,000 ones in Bucks County."

Mass-producer Levitt is no stranger to the quality market. His first Country Clubber in the Roslyn-Manhasset area is still the best Long Island has turned out for the price, and the Roslyn houses sell today for almost twice the original \$16,990.

Los Angeles' Aldon moves up

Likewise on the West Coast, **Aldon Construction Co.** (eighth biggest in the U. S. last year—26,000 houses since WW2) is moving up to mass produce higher priced houses. It has bought 160 San Fernando Valley acres for 500 expensive houses (average \$35,000), and 135 acres for 500 medium priced houses (\$20,000 to \$22,000).

Says Aldon President **Willard Woodrow**: "Why should only the lower income groups benefit by mass construction? The market for development houses is changing, and we are changing with it."

Woodrow has not changed his mind about architects, still plans to do his own design and keep it very close to what his sales experience tells him the public wants.

"I keep my finger on the public pulse, because a hot number can become a dud overnight, often without any real reason you can spot. Merchant builders in southern California face the toughest competitive situation in the world; if you miss once you can be in trouble."

Aldon plans to offer six basic expensive models and six basic medium priced models, but will allow each buyer to make changes as he wishes. Says Woodrow: "Buyers in this price class won't let us say 'This is it, period, take it or leave it.'"

Meantime, Woodrow reports sales are 1,000 ahead of production on Aldon's \$15,000-\$16,000 houses in Canoga Park.

New models up Hughes' sales to highest point since 1950

Dick Hughes says he is sold further ahead than at any time since 1950. Early in August, his sales were 50 ahead of production in Wichita Falls, about 15 ahead in Pampa, Borger, and Bartlesville.

Hughes' explanation: "I've got a good house (H&H, Mar. issue) and I pick the right towns to build in. My only trouble is my costs are up so much I can't make any money on my sales."

Same 2½ baths; \$1,000 less

Jack Bagon, who builds both on Long Island and in Connecticut, reports plumbing bills for his 2½ baths are \$1,000 lower on the island for just as good a job. Says Bagon: "Specialization and competition account for the difference. You can't beat L.I. subs."

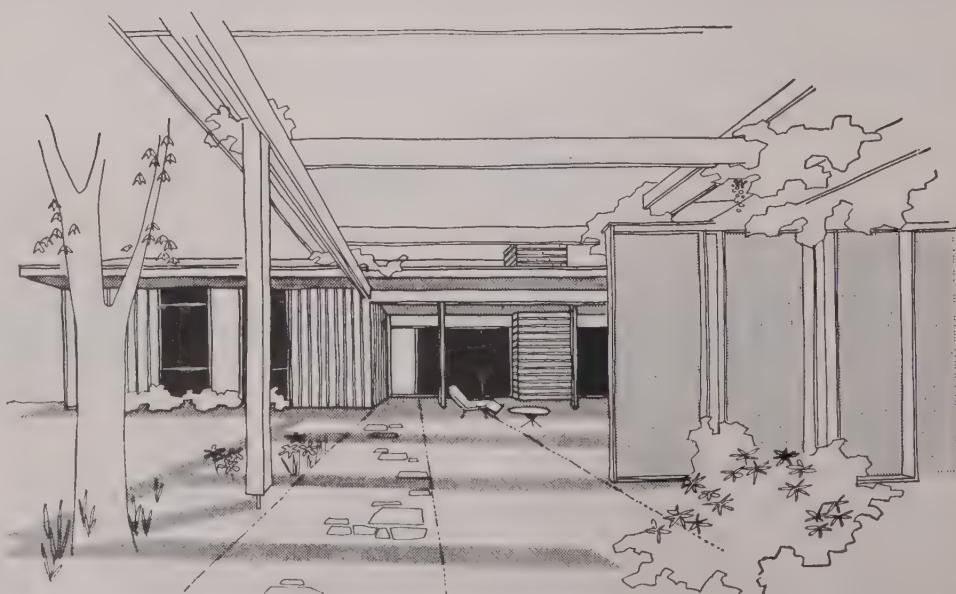
Slow sales boom new designs

On Long Island, Architect **Hank York** reports that the tougher market for houses is making him busier than ever, as more builders try to get better design and new models to help their sales. And builders don't hesitate to ask him for "a four-bedroom house we can sell for \$13,000."

Highest priced sub in country buries all wiring, even TV

Paul Trousdale is getting \$59,000 per acre, selling off homesites on the Doheny ranch above Beverly Hills (late home of the Teapot Dome oil man).

To get that price he says he has to spend \$15,000 per lot for improvements. Not only power and telephone lines, but TV antennas as well are going underground. A 51 mi. coaxial cable serves the entire 400 acre area, with laterals to each homesite. One master pickup tower will be built on a high ridge, and the cable will allow as many as eight TV sets to be installed in any house. An extended system could serve all of Beverly Hills.



Biggest builder in Hartford will try 80 contemporary houses

Hartford's biggest builder is taking an 80-house flyer in architect design and contemporary styling. He says they will be the first really modern tract houses in Northern Connecticut.

Says Builder **Irving R. Stich**: "Up to now I've always told my architect what to do. Now I've taken a lot of care to find just the right architect and I'm giving him a pretty free hand."

The architect is MIT trained **Elroy Webber**, AIA. His basic model features a 4' in 12' roof pitch, wide overhangs, sliding glass doors to a patio behind the carport, a family room with built-in open kitchen. Explains Webber: "We're trying to give most features of the more expensive house." Stich hopes to price the 1,400 sq. ft. homes on 80 x 150 lots "under \$20,000." *continued on p. 184*



Photographed at "HALEKEA," the residence of Mr. & Mrs. G. C. T. Remington, Everglades Island, Palm Beach, Fla. Architect, Gustav A. Maass, A.I.A.

Owner's report on molded plastic drawers:

New versatility...unmatched cleanliness!

Mrs. Remington used over 50 drawers molded of BAKELITE Phenolic Plastic in her new home. Here are her comments: "These drawers allow infinite arrangements. We saved space by using them in closets in the place of bureaus... 44 drawers in four closets! And, in this climate, the plastic eliminates swelling and mildewing.

"The fact that they are seamless helps in cleanliness. I think it is marvelous that I can take a damp cloth and clean them without a worry. The big thing is that I don't have to put paper in the drawers and there are very few spots where insects

can hide."

Here's proof that these molded plastic drawers will appeal to your customers. They give you that "built-in" sales advantage.

You, the builder, gain, too. Drawers molded of BAKELITE Phenolic Plastic require no finishing, are shipped ready to install. You just add handles, slide into place. Runners and center guides are molded in, the satiny black finish goes all the way through, and they are tough, durable. Best of all, the cost is competitive!

For further information, see your building supply dealer, or write Dept. TC-78.

Also see pages 175, 177, 179, 181, 185 and 187

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Gerholz scores with summer REopening of same models

Pulls first day crowd of 2,000; \$120,000 sales before night

In the bad old summertime sales often go down as the thermometer goes up.

But NAHB and NAREB ex-President Bob Gerholz put new life into warm weather sales with a dramatic REopening of his Flint houses, called a "Summer Festival."

All the fanfare of the original opening was revived with some new excitement added. Though his four models are almost the same houses he has been offering, the REopening brought 2,000 people out in the rain on opening day and resulted in \$120,000 in sales.



Realtor uses bullseye as bait for boys' sign-ruining stones

Vandalism can be cut down—or at least diverted harmlessly.

In Carle Place, L. I., broker Ernest Chester has a fine spot for his business sign, right beside the Long Island tracks. Thousands of commuters see it each day, but so do stone-throwing boys. The dented metal always needed repainting or replacing.

Now Chester has put up a small bullseye sign right next to the large billboard, with the notice, "This sign is for kids." Since then, would-be Bob Fellers sharpen up their aim on the target sign, leave the big one alone.

Kitchens still sell houses, color styling helps, too

When Sam and Harry Madway found sales lagging in their suburban Philadelphia tract they spruced up their kitchens with 15 lin. ft. of colored metal cabinets (formerly 9½ lin. ft. in white), added a built-in cooking top and oven. And they called in Consultant Beatrice West to color style the exteriors of all the houses.

Result: FHA upped its valuation \$500, to \$12,500, and 94 houses sold at the higher price in the next 56 days.

Whittier project strikes snag, Jalonak plans now in doubt

Irwin Jalonak won't play it wide and hand-some after all.

Right now, the only thing sure about the big (4,000 house) Whittier project reported in the July House & Home is that there has been a big blow-up among the sponsors and Jalonak is out. How many of his ambitious plans his late associates will go through with, nobody seems to know.

Frank Fulkerson



Contemporaries keep selling, with extra boost from trade-ins

Leon Weiner's fast selling tract of contemporary houses (H&H, Feb. issue) is still the talk of Wilmington, Del.

Said one recently arrived DuPont executive: "Every older house we looked at was on the market because the owners wanted to move to Weiner's houses. We decided it was silly to take what others were discarding, and bought the new house ourselves."

To keep variety in his project, Weiner added two more contemporary models at \$20,000: one split and a one-floor house. First sales results give the ranch model a 5 to 1 edge over the split. Chief reason: an enclosed patio borrowed from a successful Long Island version of the Hawaiian lanai (Mar. issue).

Four months ago, Weiner found that over 80% of his buyers were second-timers and started trading. Already 11 successful deals

Ace merchandiser Gerholz enlisted help:

- A pre-view aroused interest in bankers, FHA officials, press, radio, and TV.
- Manufacturers and suppliers joined in an eight page tabloid section run in the local newspaper.
- Patio and yard plantings were put in by the Flint Yard and Garden Club.
- One model was furnished right down to the last ashtray, three others had everything but living and bedroom furniture. All were completely carpeted by a local store.
- Three kitchen specialists, General Electric, Hotpoint, and Westinghouse showed off their latest equipment in model kitchens.

have been made, five of them buyers enticed by the trading angle who sold their own houses before the trades went through.

Stock offering invites public to share in land development

Want to buy stock in a big waterfront land development for \$1 a share?

Two New Jersey builders think they can finance a 225-acre tract on Barnegat Bay by a public stock offering of 690,000 shares at \$1 each. **First Jersey Securities Corp.** in Newark has underwritten the issue, which can be sold only to N.J. residents (to avoid SEC complications).

The builders are **Thomas H. White** and **Elliott E. Tyler**, of Plainfield, N. J., operating as the **American Land Investment Corp.** They bought their acreage for \$170,000, plan to spend \$300,000 for fill and drainage to manufacture building 1,200 lots, all with private boat landings.

Frank Fulkerson



Here is Earl "Flat-top" Smith's new pitched roof house

Other new features include: wider overhangs (up to 52") with outrigger rafters projecting a foot, aluminum sash throughout, colored kitchen cabinets and 15% more of them. The 2' in 12' roof pitch is optional at \$400 extra and all Smith's prices are up \$500 to \$600 to cover added amenities and increased labor and material costs, with no change in size or floor plan. With flat roof, the 910 sq. ft., three-bedroom, one-bath house will be \$9,000. An extra \$1,000 adds a two-car garage, extra half-bath, and a 90 sq. ft. concrete patio. The four-bedroom, two-bath, 1,200 sq. ft. version will be \$11,000, with both garage and patio. Says Smith: "We are trying to keep our prices as low as possible to serve the industrial worker."

continued on p. 194



Selling the house in every room



Upstairs, downstairs—whatever room you show a prospect—you've got a selling point in modern wiring insulated with BAKELITE Brand Vinyl Plastic.

When you talk about this up-to-the-minute wiring, you're talking years of extra service life. Vinyl plastic insulation is so resistant to aging factors—cracking, stiffening, and oxidizing—that it far outlasts ordinary insulation. This is the kind of wiring-for-the-future that home-buyers are looking for.

Your electrical contractor can do a

faster installation job with this insulating material. Stripping and splicing are quick and clean because conductors insulated with vinyl plastic have no braid or saturating compounds.

BAKELITE Vinyl Plastic is listed by UL for 60 deg. C. building wire and for non-metallic-sheathed cable—including the new all-plastic types UF and NMC. Tell your electrical contractor to install wire insulated with this modern, long-lived material. It's a selling point for every room in the house.

**Another way to
build better with...**



Also see pages 175, 177, 179, 181, 185 and 187

Remember—everyone benefits from ADEQUATE WIRING insulated with BAKELITE Brand Vinyl Plastic

BAKELITE COMPANY, A Division of Union Carbide and Carbon Corporation **UCC** 30 East 42nd Street, New York 17, N. Y.

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Here is the best termite advice you can get

1. Keep the whole house dry.
2. Poison the soil.
3. Put your barriers in right.
4. Watch out for cracked masonry.

These are the four best ways to protect houses against both subterranean termites and the fungi that cause wood rot. So says the new report made for FHA by a panel of BRAB experts, who urged FHA to stiffen its minimum property requirements in termite areas to enforce these rules. But the less termites are found in a given area, the less reason there is for FHA to make builders spend money for these safeguards, the report says.

Termites and wood rot cause an estimated annual loss of \$500 million damage and the damage is getting heavier, partly because termites are spreading north, partly because contemporary houses are more vulnerable (being closer to the ground), partly because more houses are being built on outlying land.

(Because most termite damage is caused by the subterranean species, the BRAB report does not cover the less serious damp-and-dry-wood termites.)

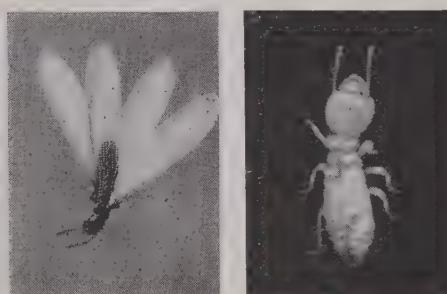
Moisture control. Since a dry house is the best insurance against both termites and fungi, the experts put top emphasis on ways to keep out moisture:

1. Keep the site dry with good drainage, and install flashing with care.
2. Don't put wood too close to the ground; the minimum clearance depends on the type of foundation.
3. Ventilate crawl-spaces and attics, especially in winter. (Homeowners should be cautioned against the natural tendency to shut crawl-space and attic vents in cold weather.)

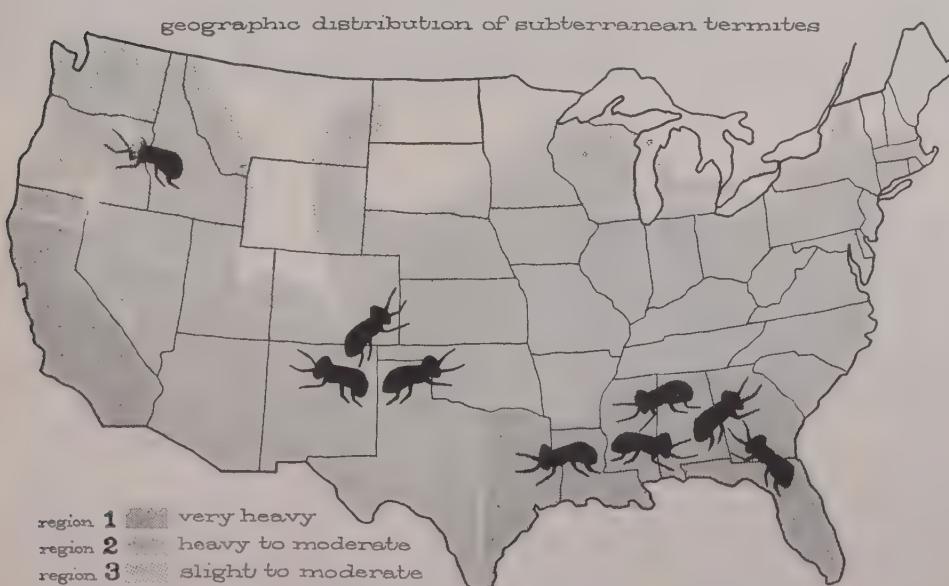
4. Use vapor barriers and proper sheathing papers.
5. Provide good site sanitation.
6. Provide for easy inspections of the substructure (so a termite breakthrough can be spotted at once).

Except in severe termite or decay areas, the above measures will "minimize" the need for other precautions.

Poison in the soil. A good chemical poison, properly injected under and around a house, should keep out termites for ten years. The report suggests that FHA should make soil poisons mandatory for all slab-on-grade houses in critical termite belts (region 1 on the map below), in other specific areas when necessary. Soil treatment is not required in present MPR's. (The panel also okayed seven different oils and chemicals good for houses and spelled out how each should be used.)



Subterranean termites: At left is winged sexual adult, which has a brown or black body and two pairs of long whitish wings of equal size; at right is adult worker, which is wingless, grayish white. Not shown is adult soldier which looks like the worker, except for larger head, longer mandibles.



Map divides country into regions of heavy, moderate and slight termite damage. Amount of termite prevention needed depends on local conditions which may be more severe or less

severe than indicated above. Wood rot from fungi is most serious in areas of heavy termite damage, but may be more severe in region 1, less severe in arid areas.

Physical barriers. A good barrier serves to fence out termites but it must be well-designed and thoroughly checked after installation. Past failure of many termite shields has been traced to "nonobservance of [these] fundamentals." BRAB recommends that FHA require an inspection immediately after shields are installed and again when the house is finished.

Concrete and masonry foundations are also good barriers. But they must be properly built so their inevitable cracks will not exceed 1/64" in width. And cracks must not extend continuously from grade to foundation top.

Wood treatment. Wood treatment is particularly good for exposed sash, frames and millwork. Its chief purpose is to prevent decay or rot, especially in localities subject to condensation or direct wetting over prolonged periods of time. (Wood treatment is not the best defense against termites because "they can tube around treated wood to reach untreated wood.")

continued on p. 190

* "Protection Against Decay and Termites in Residential Construction."

FHA gets \$76,000 worth of good advice from BRAB

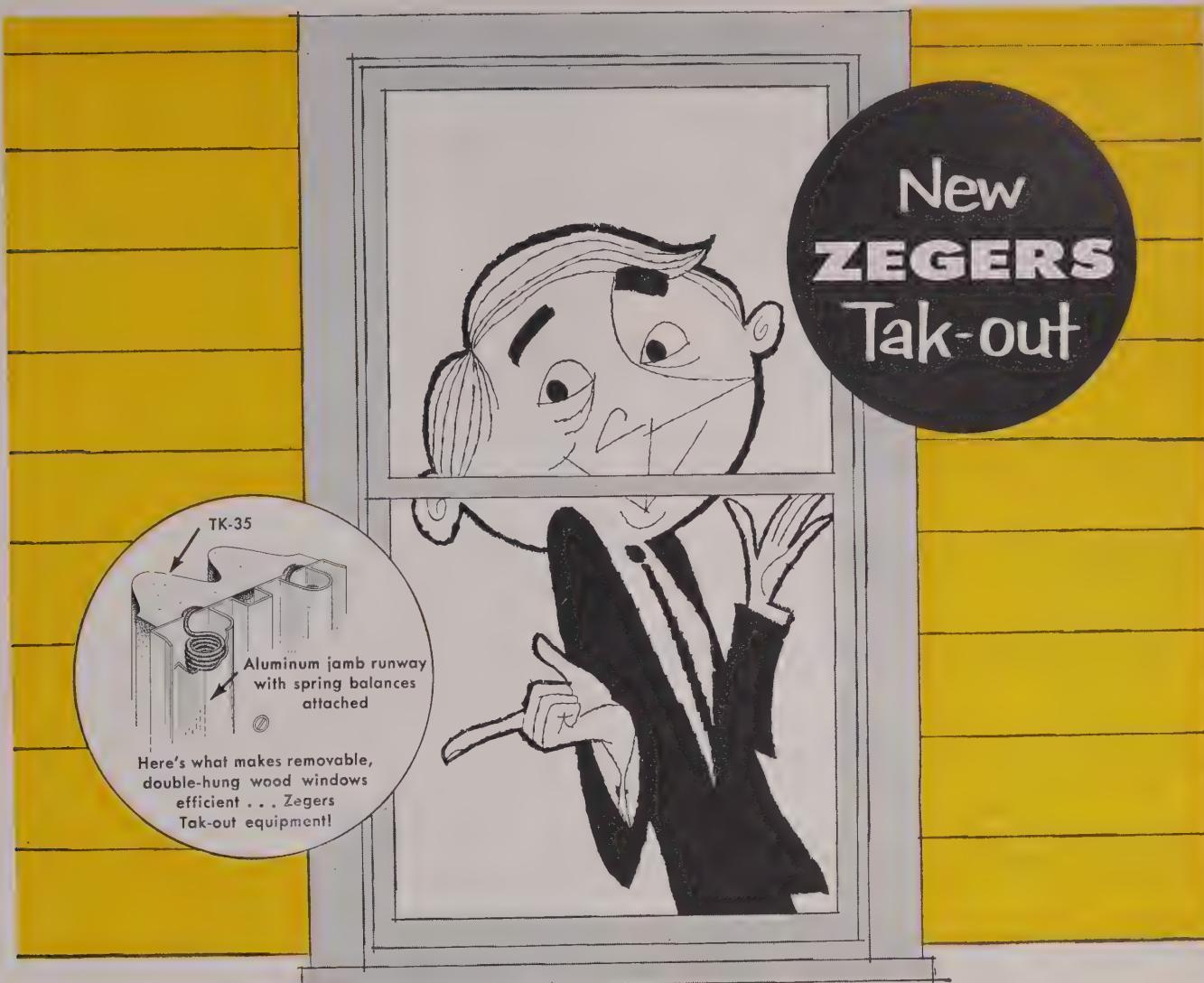
The three reports summarized here and on page 190 are part of the gold mine of expert advice FHA bought for \$76,000 in eight big reports from the Building Research Advisory Board.

Each report was made by a panel of top experts assembled by BRAB to pool the latest research information on: Termite Control, Vapor Barriers and Septic Tanks (reported here); Slab-on-Ground Construction (Sept. '55 H&H); Anchorage of Exterior Frame Walls (July '56 Tech News); Wood Block Flooring and Sizing Hot Water Heaters (Aug. '56); and Concrete Face Brick (H&H next month).

Each BRAB report not only updates all available information but also recommends appropriate MPR changes. These recommendations will be reviewed Sept. 29 in Washington by FHA's Architectural Standards Committee, which includes building experts Harold Hauf, Leonard Hager, Andy Place, Dave Slipher, Jim Lendrum, Ed Fickett, Irwin Jalonack and Howard Vermilyea.

BRAB is a private, nonprofit organization chartered by Congress as a unit of the National Academy of Sciences. It is supported by private industry to make available to government the best research and experience developed by the building industry.

The eight reports made for FHA are now available for \$1.50 apiece from the Building Research Advisory Board, 2101 Constitution Ave., Wash. 25, D. C.



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...a "tak-out" window that "keeps-out" weather!

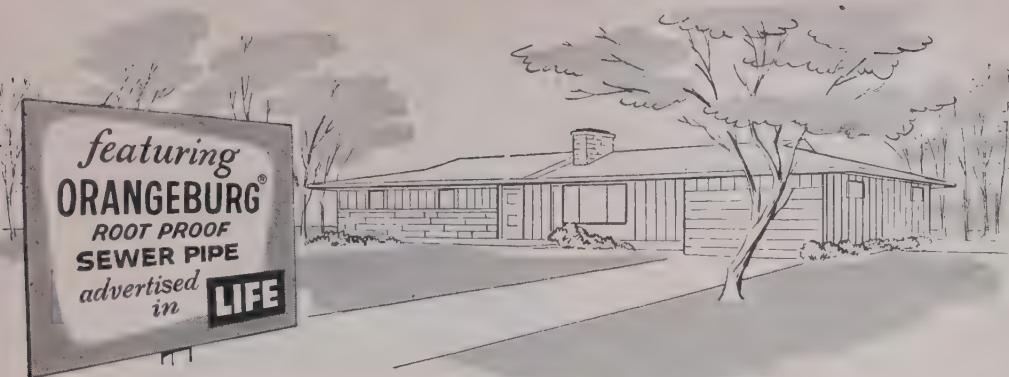
At last... a removable, double-hung wood window that provides good weather protection. Zegers Tak-out window equipment makes this possible! Here's how Tak-out works and what it consists of:

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model house. Trusted brand names are proof of high quality...create confidence...help close the sale. The sign out front "featuring Orangeburg Root-Proof Pipe advertised in Life" shows that this model house is modern underground as well as above ground. Orangeburg's national advertising is pre-selling your prospects. Tell them you use Genuine Orangeburg...It will create confidence... help sell the house. Write dept. HH-96 for free display sign.

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Automatic washers are good for septic tank systems, say experts

Are automatic clothes washers to blame for more and more septic tank failures?

Not if the absorption field is made big enough to handle the extra load. The septic tank itself need be no bigger, and there is no need of wasting money for a second separate tank.

So says a special BRAB report* to FHA, flatly contradicting the many local health officials who insist on separate disposal systems for washers. In fact, it may be better to discharge laundry waste into the regular septic tank system because "laundry wastes may be treated advantageously by the buffering action, the lint removal, and the biochemical action that occurs in the septic tank."

BRAB adds nothing new to facts reported in the US Public Health Service's giant \$300,000 septic tank study (June '55, H&H). Chief importance of the new report is that it gives FHA a basis for bringing its MPR in line with the USPHS findings.

Even if new houses are sold without automatic washers, BRAB advises FHA to require septic systems big enough for washers. This advice is based on the ounce-of-prevention theory, since most buyers eventually buy automatic washers.

* "The Effect of Automatic Sequence Washing Machines on Individual Sewage Disposal Systems."

New advice on vapor barriers given FHA by top experts

"Every effort should be made to avoid puncturing of the barrier."

This is the main advice to builders given in BRAB's new vapor barrier report* to FHA which carefully specifies how barriers should be installed. In brief:

For slab-on-grade houses: The barrier should have a permeance (water-vapor transmission rate) of not more than 0.5 perms. Joints should be lapped, with the amount of lap and the need for sealing depending on the material used. With slab heating ducts, the barrier should be placed *under* the ducts.

For crawl spaces: The barrier should have a permeance of not more than 1.0 perm (which is a looser rule than for slabs because crawl spaces are a lesser problem). Best place for the barrier is on the ground, rather than under the floor. Joints should be lapped according to the maker's instructions, but should not be sealed.

The new report also suggests that manufacturers' test requirements should be updated. All materials, for example, must now pass a 90-day soil test for FHA approval. A faster 28-day soil check has been found equally good and should be adopted.

In addition, FHA should standardize on a single set of test procedures for all materials, regardless of whether they are used in slab-on-grade or crawl-space houses. Split requirements are now the rule.

* "Vapor Barrier Materials for Use with Slab-on-ground Construction and as Ground Cover in Crawl Spaces."



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He can really hurt your reputation.
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your blueprints, homes you build from
them won't be able to cope with the
electrical demands of modern living.

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the most modern homes! He loves
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ognized quality in
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How to sell houses for \$49,000 on land costing \$1,000 an acre

Long Island Builder Sam Bernstein has struck paydirt in the south shore swamps. lands.

While other builders are paying \$5,000 to \$6,000 an acre for easily-worked potato fields farther out, this 70-year-old veteran is paying \$1,000 for salt marshes his competitors passed by as unworkable. Then he spends \$2,000 per small lot (62' wide) to convert his low lying land into fine sewer-served homesites with the double sales appeal of a close-in location and near-the-waterfront breezes.



SWAMP FILLED WITH FILL . . .



FILL FILLED WITH HOUSES

Dredges suck sand from the bottom of the bay to raise the land level an average 6'. All houses rest on 20' deep concrete piles, sometimes driven down to solid bearing, sometimes on spread footings (driven piles cost 40¢ per cu. yd.).

Says Bernstein: "You can't guess costs to the penny. If the inspector says 'more piles', you put them in."

Bernstein estimates the extra cost of careful reinforcing and pile driving at \$800-\$1,000 per site, plus two weeks extra building time. Overall, it costs \$3,000 more to build on this marginal land, but the low original cost makes this up.

In his present development, **Saddle Ridge Estates**, just over the New York city line, Bernstein's splits sell for \$29,000-\$49,000. Buyers can have larger lots if they want to pay 50¢ per sq. ft. more.

Sales managers go to school

First step in training salesmen is to train the men who teach them how to sell, so 27 sales managers (whose combined sales last year were 8,319 houses) took a four-week course this summer, sponsored by the **Associated Home Builders of Greater East Bay**. Teacher was Sales Consultant **Clyde S. Cook**.



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WORKABLE. GPX Yellow may be sawed, machined, drilled, patched, nailed, riveted, glued or edge-sanded with ease.

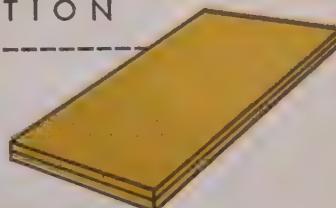
SMOOTHER. GPX Yellow is so smooth that sanding is never necessary before painting and its hard plastic surface requires less paint.

FLEXIBLE. GPX Yellow bends to the same short radius as regular plywood.

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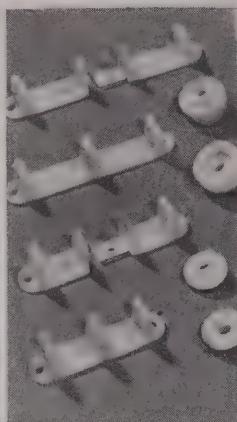
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b. Fuel line and fittings are molded of Zytel nylon resin. Jaco Mfg. Co.



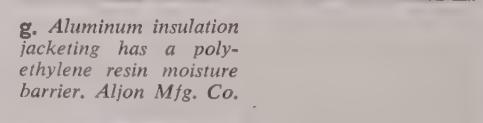
c. Floor guides and suspension rollers for sliding doors are of nylon resin. E-Z Roll Hardware Mfg. Co.



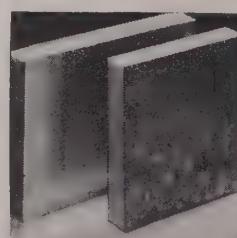
d. Radiant heating wire is coated with Geon vinyl. Electro-Mode Corp.



e. Vinyl standpipe (left) is approved for carrying drinking water. Colonial Plastics Mfg. Co.



g. Aluminum insulation jacketing has a polyethylene resin moisture barrier. Aljon Mfg. Co.



h. Laminated sandwich panels of expanded and expandable polystyrene. United Cork Co.



i. Shower head of nylon resin resists corrosion, liming. Warren-Magnuson, Inc.



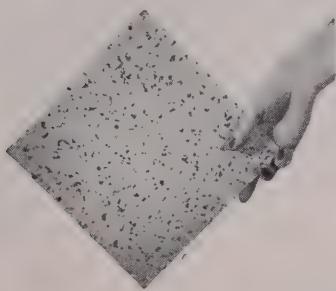
j. Self-locking nuts have resilient nylon bonded within metal nut to grip threads of bolt so it cannot loosen. Elastic Stop-Nut Corp.

You can put a plastic product to work in almost any phase of home building. On other Product pages in this issue, you will see plastics for floors, ceilings, wall coverings, windows, screens. Plastics are the base of new paints, the covering for expansion joints, the weather-protector for workers and materials on the job. For more about these and other new products, please turn to p. 201.

for further details check numbered coupon, p. 270



k. Amictico Customotifs vinyl tile is specially precut to get a lot of designs from the same basic tile. Each 9" x 9" square is cut into five separate pieces, can be varied to give different effects. Company has also recently brought out "Decorstrips" in five patterns—36" l., 3" w., $\frac{1}{8}$ " gauge—for borders and feature strips on walls and around floors. These new strips come in black and white with gold vinyl inserts. Both tiles are hard wearing, highly resistant to stains and scuffs. You can get special colors on special order for either. American Biltrite Rubber Co., Trenton, N.J.



l. Terrazzo Bolta-Floor vinyl tile looks as if it might have come straight off a Venetian floor. The pattern is fashioned after true terrazzo floors, which incorporate large chips of highly polished varicolored stones in the design. Tile colors are bright, retain high gloss and luster with or without waxing, company says. You can also get Bolta-Floor in plain and marbleized patterns in an impressive array of colors. About 60¢-65¢ per sq. ft. for plain, marbleized tile; 70¢-75¢ psf for Terrazzo. The General Tire & Rubber Co., Flooring Div., Akron, Ohio.



m. Lam-O-Wall plastic wall covering incorporates designs between rigid vinyl sheets. This one is made by swirling yarns, allowed to fall in a free form pattern. Opaque Bakelite vinyl sheet is background for the material and an overlay of transparent vinyl preserves and protects it. You can get 8 background colors, 3 surface texture finishes. Standard thickness is .0175". Standard sheet size 42" x 62" trimmed to cover 18 sq. ft. An all-purpose adhesive is available from manufacturer to give a moisture-resistant bond. Laminated Plas-Tex Corp., Springfield, Ohio.

continued on p. 203

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aluminum won't rust. The bright, beautiful colors are so easy to keep clean...for a lifetime.

Alcoa doesn't make wall tile. We make the better, longer lasting, stronger aluminum from which the tiles are formed. We'll gladly put you in touch with the tilemakers. Just write Aluminum Company of America, 1969-J Alcoa Building, Pittsburgh 19, Pa. Or call our nearest sales office.

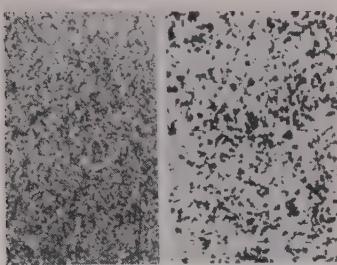


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n. Metaltone tiles use flakes of metallic color—burnished copper, gold and silver—for sparkling effect on floors. Manufacturer says these new vinyl tiles can be installed over practically any existing subfloor without expensive preparation, since flooring conforms to uneven surfaces without cracking. Tiles are 9" sq., $\frac{1}{8}$ " thick, can also be ordered specially. Speckled pattern at left incorporates deep color all through the tile. On right, black or white background has a random sprinkling of metallic color. Company says both tile patterns will retain color, sparkle. From \$1-\$1.20 psf. Robbins Floor Products Inc., Tuscaloosa, Ala.



o. Plastic wall tile is flexible enough to cut with scissors and can be bent or curved around corners without cracking. Surface is textured to look like bamboo, or you can create a basketweave effect by alternating the surface grain. Company says tile is hard wearing in kitchens since it resists fats, oils and grease. 8" squares are easy to handle, easy to install. Colors are claimed to be fade-resistant; tile wipes clean with a damp cloth. Bolta Products Sales, Inc., Lawrence, Mass.



p. Brick patterned vinyl sheet is formed in new type three-dimensional panels for indoor applications. Real brick appearance is imitated as closely as possible since patterns are slightly irregular and three-dimensional design makes imitative bricks appear to stand out a full half inch with a half inch between each imitative mortar joint. Sheets are made in 3' x 5' panels, can be cut with a fine tooth saw, sharp knife or heavy shears. Put sheets over existing plaster, wallpaper or wallboard with waterproof cement or mastic and small finishing nails. Price is about \$12.75 per panel. Studio Brick, Inc., Hollywood 46, Calif.

continued on p. 205

**ADD THE
CUSTOM TOUCH**

with

**FIR PLYWOOD
BUILT-INS**

IT'S EASY to add new convenience and distinction to your homes with fir plywood built-ins. Storage cabinets, wardrobe or built-in furniture—fir plywood is the logical material for *any* built-in. No other material is so adaptable to specific design and space requirements. Fir plywood is light, strong, good-looking. Takes any finish. Works quickly, easily, simplifies framing—for on-job construction or shop-fabricated units.

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DFPA trademarks assure quality. Standard grades for interior finish are A-A, A-B and A-D (PlyPanel®). Special panels include overlaid plywood . . . "relief grain" (brushed, embossed and striated panels) . . . and Texture One-Eleven® "grooved."

Plywood of other western softwoods available; look for this DFPA trademark.



Visiting the National Housing Center in Washington, D. C.? Be sure to see the Bostitch exhibit of cost-cutting builder's tools.

3 Cost-cutting Ideas for Modern Builders!



2. Use tacker to put up ceiling tile

Ceiling tile with stapling flanges goes up a lot faster when you use a Bostitch T5 Tacker. Neater, too, since the danger of hammer-marred edges is eliminated.

Gummed staples with 9/16" legs hold fast, don't pull through like nails under stress. T5 tacker also drives staples with 1/4", 3/8" and 1/2" leg lengths for other tacking jobs.

Fasten it better and faster with



1. Lay shingles with Bostitch stapling hammer

Builders using the Bostitch H4 Stapling Hammer say they wouldn't be without it, claim they can halve the time required to lay asphalt shingles on new roofs.

One quick blow with the H4 hammer drives a 3/4" galvanized staple all the way home, spreads the staple legs for extra grip.



3. Save insulating time with H2B hammer

More than twice as fast as hammer and tacks and a good deal faster than a stapling tacker, the Bostitch H2B Stapling Hammer speeds the application of batt and reflective insulation.

H2B drives staples with 1/4" and 3/8" legs. H2B1/2 takes staples with 1/2" leg lengths. H2BR drives wide wire staples—ideal for felt and flashing papers.

BOSTITCH, 529 Mechanic Street, Westerly, R. I.

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H4 Stapling Hammer T5 Tacker H2B Stapling Hammer

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Firm _____

Address _____

City _____ Zone _____ State _____

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q. Alsynite "Steplap" building panels have a clapboard profile. Unlike earlier plastic sheets with this profile, each step in this one has a narrow flat surface which makes it easier to nail directly to a joist. Here, "Steplap" panels are used to make a broad overhang for a patio. Horizontal lines allow installation on rafters with no need for purlins. "Steplap" comes in ten colors, 10'-4" l. and 31½" or 41½" w. Chemiglaze process on "Steplap" is said to protect it from exposure to all kinds of weather. Alsynite Co. of America, San Diego 8.



r. Rend-O-Lite—a translucent Fiberglas reinforced structural panel . . . screens a patio or garden with natural textured fabric patterns that almost blend into the landscape. Rend-O-Light is heavily reinforced with fiberous glass in addition to the embedded fabrics to give it great strength. The fence shown here uses two patterns—a flat natural burlap and a bleached flat burlap. Both come in 8' and 10' lengths, 34" wide. Maker doesn't use dyes in the resins so light transmitted is natural, not reflected color as sometimes occurs with colored sheets. Both flat and corrugated patterns cost about \$1.25 psf. Commodore Ind., Redwood City, Calif.



s. Window sash of extruded rigid Geon was shown in the Geon house during the Plastics Exposition in New York in June. Advantages claimed include: no paint maintenance, no sticking caused by warping or swelling, no rotting due to water penetration. Company says double glazing will add only cost of glass and labor, since extrusion for two panes is no more expensive or complicated. Sash is colored to mix or match with other construction materials. Windows above were in the Geon house kitchen. B. F. Goodrich Chemical Co., Cleveland 15, Ohio.

continued on p. 207

ADD THE
CUSTOM TOUCH

with
Texture One-Eleven®
FIR PLYWOOD PANELING

LIFT YOUR HOMES out of the ordinary with exciting Texture One-Eleven fir plywood paneling. Deep parallel grooves and subtle surface texture combine to form a striking feature for any home. Use this new vertical shadow-line plywood for feature walls, ceilings or built-ins. Texture One-Eleven goes up quickly, easily; shiplap edges neatly conceal vertical joints. Grooves are full $\frac{1}{4}$ " deep, $\frac{3}{8}$ " wide . . . have sharp, clean-cut edges.

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WSP DFPA TRADEMARK

Plywood of other western timbers available. Look for this DFPA trademark.



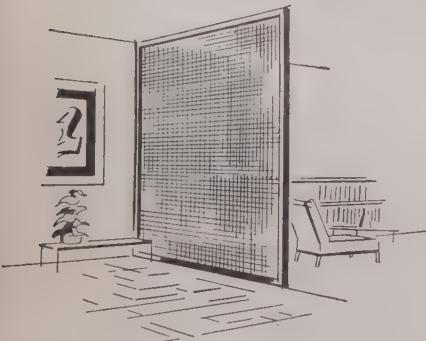
POPULAR DOUBLEX PATTERN

SO MANY WAYS TO
ADD GLAMOUR
 WITH
DECORATIVE GLASS

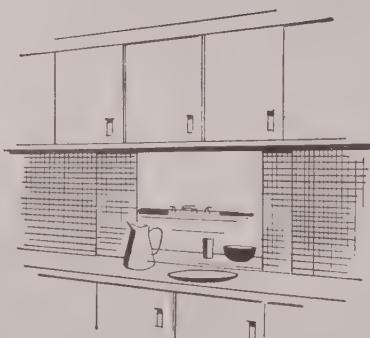
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Looking for a house-selling feature that hasn't been exploited to death? Try Blue Ridge *Patterned Glass*! It's a low-cost way to add sparkle and "exciting newness" to houses in any price range. And, because there are so many beautiful patterns—and uses—it's easy to give each house in a project a distinctive touch of its own.

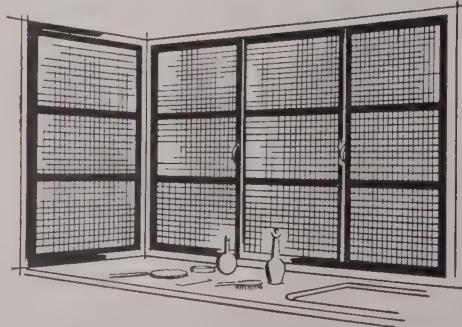
Patterned Glass by Blue Ridge is easily installed. Entire walls can be glazed as simply as windows. Most patterns are available in sizes up to 54" x 136" and some up to 60" x 136". See the beautiful patterns at your L·O·F Distributor or Dealer (listed under "Glass" in the phone book yellow pages) or send for free booklet offered below.

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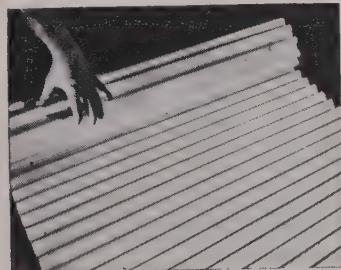
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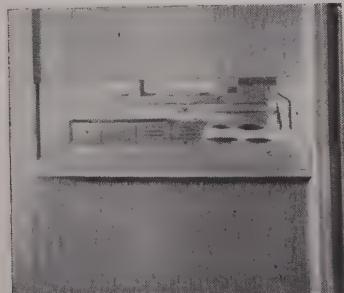
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t. Plastic screen, used here in a kitchen installation, has a 3" plastic square as its basic component. Squares are injection molded for uniformity from Tenite Butyrate and Lucite and hi-impact Styron to give maximum impact weather resistance plus high strength and opacity. When screen is assembled, component squares are vertically interlocked with spring steel rods. Nylon hinging mechanism is attached to provide folding action and screen is suspended from standard drapery track. Sizes from 18"-21' in vertical lengths and from 18"-16' in horizontal lengths. Universe Products, Los Angeles 6.



u. Luminous plastic ceiling of vinyl rigid sheet is compounded to give desired amount of light. This one is translucent. It is corrugated for rigidity and light diffusion and long strips are laid on I-shaped metal tracks running from wall to wall about 1½' below fluorescent lighting strips attached to a white-painted ceiling. Application is said to do away with glare and shadow. Acoustical fins suspended from I-tracks serve to reduce noise levels. Space between subceiling and actual ceiling can be used as duct for both air conditioning and heating. Luminous Ceilings, Inc., Chicago.



v. Lamidall decorative plastic laminate, seen here as facing on a kitchen pass-through, comes in a wide range of patterns, colors, marbles and wood grains. Tough, stainproof surface of decorated alpha paper impregnated with polyester resin is bonded to 1/8" thick structural tempered preswood base. You can apply Lamidall to wall and counter surfaces. It comes in standard sizes up to 48" w. x 144" l.; moldings to match are available. Wood grain patterns are particularly handsome. Material costs 65¢ psf. Woodall Industries, Inc., Skokie, Ill.

continued on p. 212

ADD THE CUSTOM TOUCH

with "RELIEF-GRAIN" FIR PLYWOOD

OFFER YOUR CUSTOMERS the rich good looks of real wood paneling with inexpensive "relief grain" plywood. The surface is textured (brushed, striated or embossed) to create a striking third dimensional effect that adds warmth and charm to any setting. Ideal for feature walls, ceilings or built-ins. Goes up quickly. Strong, won't crack or split. Takes any finish—including dramatic tone-on-tone effects.

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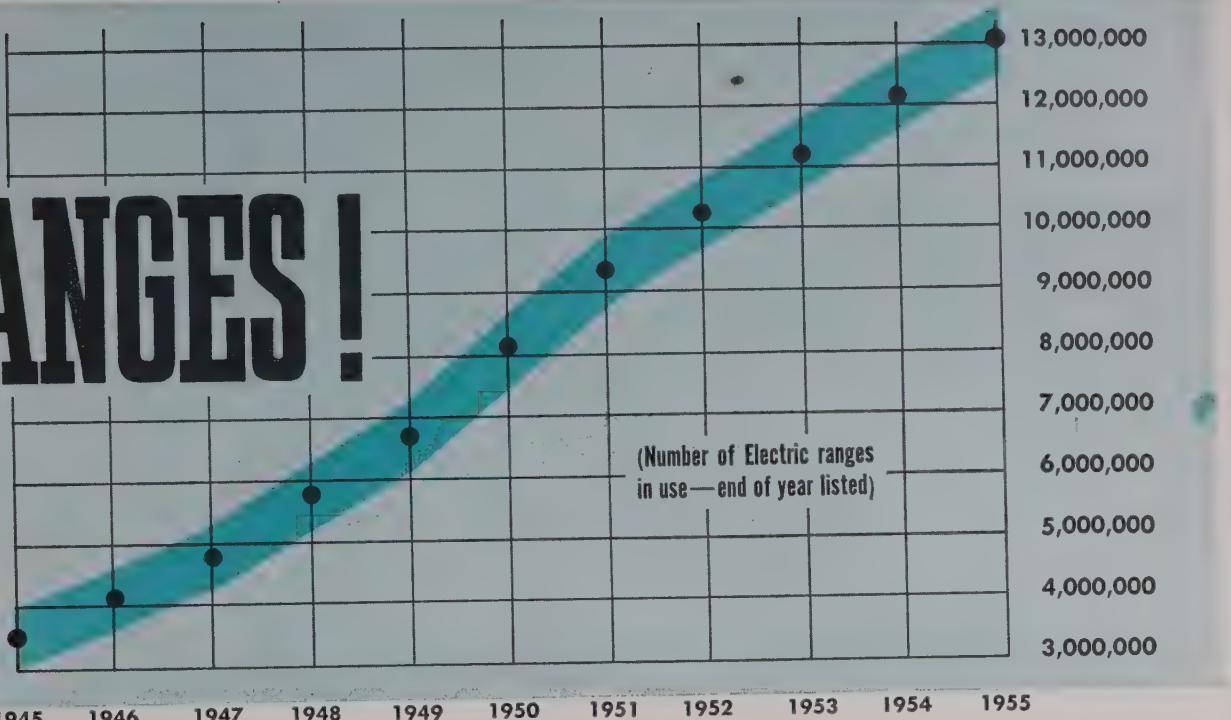
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It costs nothing extra to give your homes the added glamour of matching counter tops and floors. Here, a kitchen gets a distinctive "custom look" with an Armstrong Decoresq® Corlon floor and matching Armstrong Corlex plastic laminate counter tops—both in an attractive Homespun* pattern.

RANGES!



Source: ELECTRICAL MERCHANDISING Annual Statistical and Marketing Issues



"In our territory," says Mr. Plencner, "Electric Ranges are a definite help in selling homes. People who buy the kind of homes we build are not content with anything but the most modern equipment." The home you see here is really planned for gracious living. It is of brick and redwood, with a white asphalt shingle roof. It contains 6 rooms and 3 baths, has a breezeway and fully paneled basement. The kitchen is in keeping with the rest of the house. It includes an electric refrigerator, food waste disposer, and built-in ELECTRIC Range.



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Glass — bringing light, vision, beauty to our new construction is offered by Fleet in matching frames of extruded aluminum. Engineering has solved the problems of weathertightness and ease of ventilating. Good design has made it practical to mix different styles in the same building.

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w. Polyethylene film for construction trades comes in 2, 4, and 6 mil gauges and in widths up to 16½'. Its uses are many and varied. Here it protects workers, materials and equipment from the weather. Company also advocates its use to help cure cement or bricks in minimum time. Other home building applications include: under slab or basement floors and around foundation walls; as moisture and vapor barrier; between floor and subfloor; as air and dust barrier; on warm side of wall studding as moisture and vapor barrier. Olin Mathieson Chemical Corp., New York 22, N.Y.



x. Bruce Vapo-Chek is made for use in surface dampproofing concrete floor slabs. A tough, transparent polyethylene film, it comes in packaged rolls 750 sq. ft. and 36" wide. You unroll it over the area to be protected which has been previously spread with a cold-type mastic. Block and strip flooring on screeds can be installed on concrete slabs previously dampproofed with the film. Two mil gauge is claimed to give long lasting moisture protection, requires no special installation techniques. \$7.25 per roll F.O.B. E. L. Bruce Co., Memphis 1, Tenn.



y. Sisalkraft Moistop is used as a permanent vapor barrier under concrete and as a ground cover in crawl spaces. Moistop is claimed to be the only reenforced paper-supported polyethylene product now marketed for the building industry. A companion product, Sisalkraft Vaporstop, is a fungicide-treated paper product. Principal use is under concrete slab. Both materials are available in widths up to 8', cost from 2-3¢ psf. American Sisalkraft Corp., Attleboro, Mass.

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HART**

Quiette

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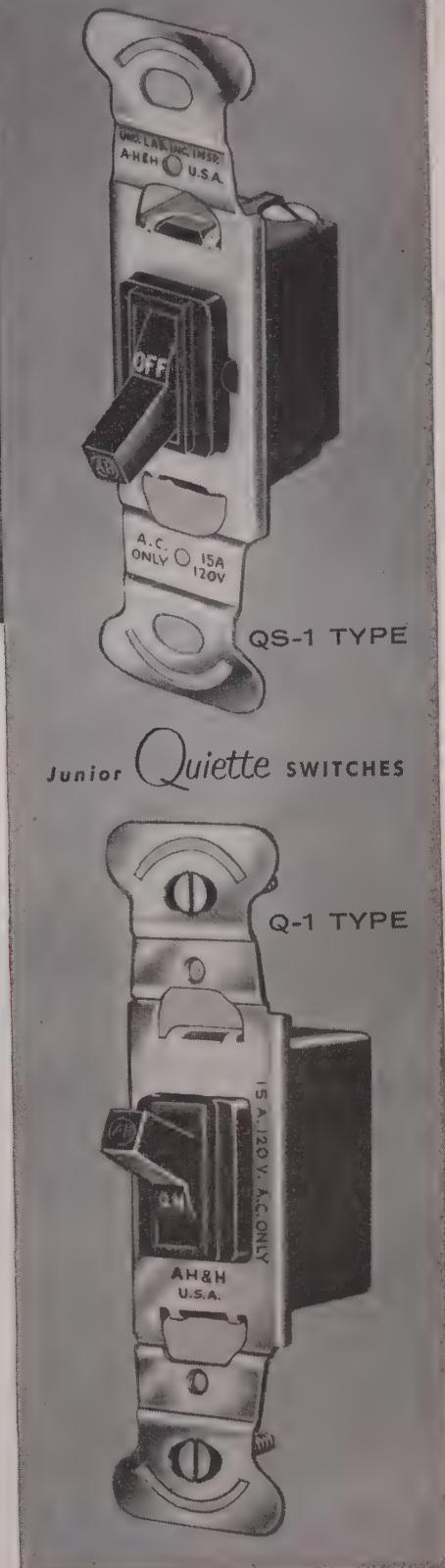
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Each of the 4,000 homes — \$11,750 to \$15,700 — in the Lake Hills development, Bellevue, Washington, will have "silent salesmen" in every room — ARROW-HART Junior QUIETTE SWITCHES.

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(right) Concrete masonry constructed model home in "Parade of Homes." Note slump structural wall units used.

From a relatively small part in the building industry to a starring role . . . that's the remarkable record of concrete block! Even more unusual is the brief period of time in which this progress was made.

It's not so long ago that concrete block was considered suitable principally for basements. Then its use was extended to small buildings such as garages. Expansion into new applications was slow because block-making itself was a slow and painstaking process.

With the introduction of the Vibrapac automatic block machine, however, the situation



(right) Dense aggregate block in stacked bond used in construction of this Sewage Treatment Plant.



(left) Note the beauty of the exposed concrete block wall in this church interior. 4" and 8" units were used alternately.

changed dramatically. Almost overnight Vibrapac block caught the fancy of the building industry. Its availability and economy, combined with high quality, revolutionized old-time building concepts. The ease and speed with which Vibrapac block could be laid, the development of modular units, and its dependable uniformity attracted attention everywhere. Builders who wanted to build faster, better and more profitably swung over to concrete masonry in ever increasing numbers. Architects, seeing the almost unlimited versatility of Vibrapac block, specified block for churches, schools, theatres, commercial, government and industrial buildings as well as for housing.

To prospective owners of homes and other buildings, the new beauty and adaptability



CONCRETE BLOCK . . . Now Recognized as a Complete Building Material

of concrete masonry were eye-opening. Because of the Vibrapac process, concrete block could be used effectively and economically in every phase of construction . . . for exterior walls, solid or veneer, interiors, partitions, floors, ceilings, corridors, entrances. In fact, the entire building from roof to basement could now be erected using one major mate-



Lightweight block were selected in the construction of the beautiful Ford Rotunda at Dearborn, Michigan.

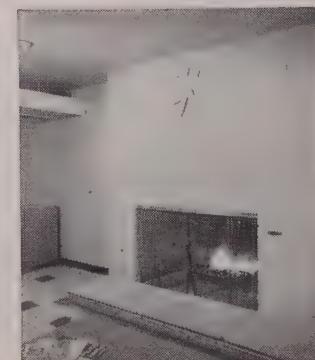
rial only . . . Vibrapac block. Furthermore, the appearance, strength and longevity would be as good or better as with any other kind of building material. Concrete block, with the aid of the Vibrapac automatic method of block production, had "arrived"!

When the "building boom" developed, the true worth of concrete masonry was again



Concrete masonry constructed church school. Note the unusual effect created by alternately protruding block.

(right) Frank Lloyd Wright designed this beautiful concrete masonry home, using standard 4" high block.



(left) Exposed concrete block in stacked bond adds charm to this residential fireplace.

demonstrated. In new homes especially, concrete block became adaptable to a wide range of artistic and practical effects which added



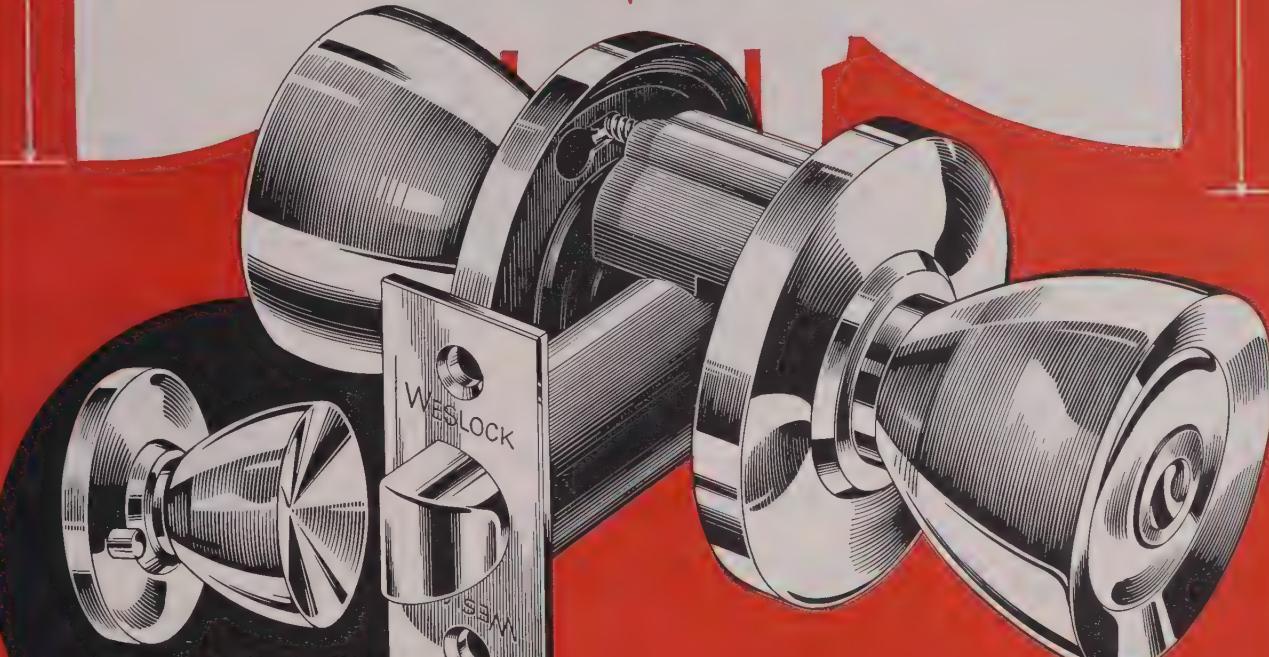
California police station built of concrete block for beauty, as well as for firesafety and earthquake protection.

to the spaciousness and comfort of modern living . . . without adding to the cost. Today, concrete block is recognized generally as the truly universal and complete building material. For information write Besser Company, Box 175, Alpena, Michigan, U.S.A.

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LOCK CASE HOLE
2 1/8" dia



Uniform knob design retained
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button locking in the rosette.

Here is a brilliant interpretation of today's demand for more impressive residential locksets within a modest budget. The new Sunray **De Luxe** design is a masterpiece of contemporary beauty destined to become the standard of budget priced residential locksets among architects, builders and contractors everywhere.

There is a Sunray **De Luxe** lockset for every door in the home.

See the New Sunray **De Luxe** with matching cabinet hardware on display in our Booth 133, NBHA Exposition, Conrad Hilton Hotel, Chicago, Sept. 10-12, 1956.



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★ LARGE REFRIGERATORS

—up to 7 cubic feet in the Dwyer "69" with stainless steel freezer compartment and storage shelf in door.

★ ROLL-OUT SHELVES

—all storage space in new Dwyer refrigerators is easily accessible. Shelves glide smoothly in and out on nylon rollers.

★ "LIFETIME" PORCELAIN

—from top to bottom. Entire kitchen fronts and seamless range-sink tops are finished in gleaming vitreous porcelain that retains beauty under hardest usage.

★ FULL SIZE OVENS

—separate bake and broil burners. Convenient high broiler on both gas and electric models.

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—includes upper cabinets protected by insulated porcelain heat deflector over range burners. Full depth under-sink cabinet. Roll-out pot and pan drawer.

★ 4 SIZES

—from ultra compact models 39 inches wide to family size models 69 inches wide. Each of Dwyer quality and convenience.

Modern kitchen convenience in compact space for the efficiency apartment, for hotels and motels. Facilities for easy hospitality and buffet meals on the living-porch, in the recreation room of the spacious home . . . in time-saving office installations. More than 50 thousand Dwyer Kitchens, installed over 10 years ago, are proving it in trouble-free performance today. Write for literature.

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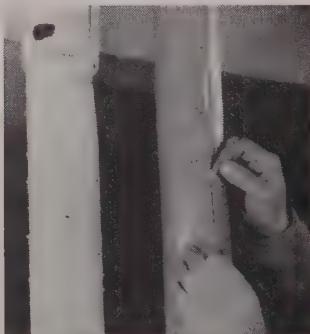
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z. Plasti-grip is a three-purpose joint of extruded plastic (polyvinylchloride) that you can use as an expansion joint, construction joint or waterstop. It comes in continuous strips 100' long and 5"-6" wide. Cut it with a knife, as in photo above, or splice it on the job if you need a T-joint or an X-shape. Deep grooves grip tightly into concrete, "U" shaped center pleat expands and contracts with the joint. Plasti-grip is claimed to resist water pressures up to 125' head, stays flexible even in low temperatures and resists alkalis and acids. Progress Unlimited Inc., New York 36, N.Y.



aa. Foamflex Doorstrip for weatherstripping is made of closed-cell, water-resistant foam permanently bonded to the edge of a $\frac{1}{4}$ " x $\frac{3}{8}$ " beveled clear wood molding that becomes a part of any door frame. Doorstrip is packaged in one 3' length and two 7' lengths—more than enough to weatherstrip an average size door on both sides and top. Company says Doorstrip's flexibility under extreme temperature range, plus its wide contact area, assures an air-tight seal even on a badly warped door. Kit, as shown above, sells for \$2.29. (Three outside doors can be weatherstripped for about \$7). J. W. Mortell Co., Kankakee, Ill.

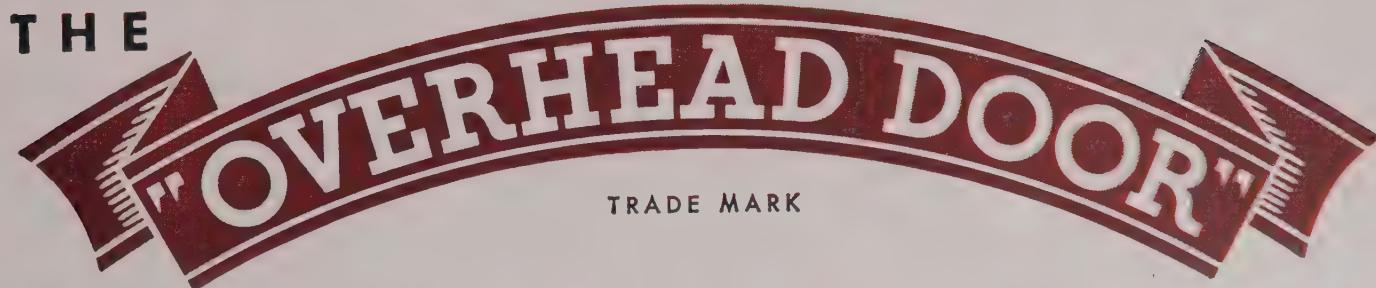


bb. Plastic pipe covering of Krone vinyl film protects insulation for pipes, ducts and cables. The new covering, called "Protektinsul" has a combination of features: flexibility, good moisture-vapor resistance, durability. A plastic slide fastener that works like a zipper, allows a worker to inspect the pipe at almost any point without damage to the cover. Jacket is made in colors so it can serve as the basis of an easy identification system, particularly good in large scale installations. Miracle Adhesives Corp., New York City.

continued on p. 220

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And, in 1956, more people
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Only The "OVERHEAD DOOR" offers builders so many advantages . . . so much service!

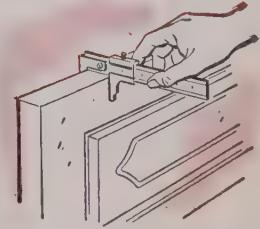
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Top quality materials, the most expert craftsmanship make The "OVERHEAD DOOR" America's finest garage door.



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"Our experience proves a quality kitchen sells a home faster . . .

that's why we feature . . .

GENEVA Kitchens™

says John Smith, partner, Consolidated Builders, Chicago Heights, Illinois.



"The GENEVA kitchen was a big influence on our selecting our home, and I have been delighted with it ever since," says Mrs. P. L. Benshoof, Jr.

Right—View of Consolidated Builders' 172 home project in Chicago Heights, Illinois.

Leading builders, contractors and architects, like Mr. Smith, have learned that a Geneva steel kitchen sells their homes *faster*. Offering the widest selection of cabinet sizes, Geneva saves man-hours on installation . . . permits tailoring a Geneva Kitchen to any kitchen floor plan. Cabinets available in six easy-to-live-with colors and standard white.

Geneva Kitchens meet every requirement of the up-to-date builder. See how Geneva Kitchens fit your plans—at a price to fit your budget.



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GENEVA MODERN KITCHENS

(Division of Acme Steel)

Geneva, Illinois (Dept. HH-9-56)

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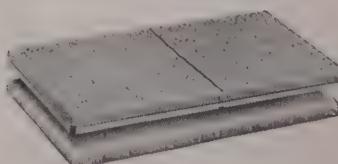
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cc. **Vitricon spray-on block facing** is a cold-glazed cement mixture that, when applied, becomes an integral part of the concrete block without bonding or pressure casting. It can be either factory or site applied to block or walls. Vitricon looks a little like mottled tile. Company claims its hard, glossy surface is impervious to most chemicals. It is available in a range of colors to give an attractive finish to basements, halls and utility areas. Site-applied, Vitricon finish costs about 60¢ psf, including labor. The Concrete Corp., Long Island City, N.Y.



dd. **Styrox masonry coating** has a base of polystyrene latex. It is quick-drying, durable and easy to apply on plaster, brick or cinder-block surfaces. Here it's rolled on in a single coat which is enough to cover most surfaces. It adheres firmly to resist peeling, chipping or cracking on a properly cleaned surface. Maker feels it is particularly good for sealing fissures in concrete surfaces, since coating tends to reduce spalling and the tendency to surface disintegration caused by moisture. Nine colors, \$6.75 per gal. Protex-A-Cote Inc., Newark 5, N.J.



ee. **Spatterfect Acoustimetal** is a new predecorated metal acoustical unit. It masks the geometric pattern of its acoustical perforations with an attractive spatter of dark green paint on its standard white finish. Like standard 12" x 24" Gold Bond Acoustimetal units, Spatterfect has sound absorbing, incombustible acoustipads to give a noise reduction coefficient range of .80-.90. Design of the new unit harmonizes well with informal, casual design. Maker says after installation maintenance is easy—a damp cloth or sponge cleans surface. National Gypsum Co., Buffalo 2, N.Y.

continued on p. 224

CALIFORNIA REDWOOD

Individual landscaping for tract homes

Home-buyers in Sacramento's Foothill Farms subdivision have the unusual opportunity of planning their landscaping with professional assistance. This free service consists of a 54-page How-to-get-started Guide, featuring many variations of redwood structures which are demonstrated in seven model outdoor garden rooms. All were designed by this well-known San Francisco landscape architect.



Douglas Baylis' interesting commission called for a variety of plans—complete with construction and planting information—which enable new owners to develop luxurious outdoor living space at moderate cost.



Besides wide experience in subdivision developments, his professional practice includes numerous private gardens, school grounds, parks, industrial plants, and designs for the San Mateo County Fair Garden Show.

Baylis has lectured at Stanford University, and the University of California, and is consultant to several national magazines. Recently he was appointed Supervising Landscape Architect to the University of California, Berkeley.

CRA

CALIFORNIA REDWOOD ASSOCIATION
576 Sacramento Street, San Francisco 11, California

for further details check numbered coupon, p. 270



Residence of J. C. Davidson, Manager, Application Engineering Department, Airtemp Division, Chrysler Corporation, Dayton, Ohio. Completely air conditioned with Airtemp equipment and Kno-Draft Overhead Air Diffusers.



Living room has two Kno-Draft Diffusers. Air distribution system and fan-coil unit are located in attic. The condensing unit is at rear of house.

Why Air Diffusers are making grilles obsolete

Unlike grilles, which merely "dump" warm or cool air into a room, letting it mix *ad lib*, Kno-Draft Overhead Air Diffusers are true air mixing devices. They do their job thoroughly, within inches of the diffuser and well above the living level.

Thus, there is no feeling of air movement, no drafts, and temperature is equalized throughout the area. And home owners also appreciate the clean, anti-smudge operation of Kno-Draft Diffusers and the freedom in furniture placement they allow.

From the contractor's point of view, the superior advantages of Kno-Draft Air Diffusers mean added sales appeal and a chance to get away from straight price competition. And Kno-Draft jobs are easy to figure, easy to install.

You'll be interested in our special bulletin describing Kno-Draft Residential Air Diffusers—their advantages, method of selection, system layouts, installation details. Send for your copy today. Connor Engineering Corporation, Dept. F-96, Danbury, Connecticut.

CONNOR
ENGINEERING
CORPORATION

kno-draft®
residential air diffusers



ff. Fire-Chex '400 is a giant shingle of mastic mat composed of interlaced asbestos fibers bonded with Carey Thermoplastic asphalt—18 $\frac{1}{8}$ " x 24". Specially designed for low pitch roofs, it gives an unbroken color exposure 10 $\frac{1}{2}$ " x 18 $\frac{1}{8}$ ". Shingle is 400 lbs. per square as its name implies, is 50% thicker than usual shingles. Its strength and weight make for strong resistance to high wind. The 400 has a Class A fire-safety rating from UL plus approval down to roofs of 1" pitch. The Philip Carey Mfg. Co., Lockland, Cincinnati 15, Ohio.



gg. Rocket 6000 sliding door hardware line is comprised of 15 complete sets, each specially made for a specific or dual function. Steel and aluminum tracks are available and single or double-wheel pivoting carriers can be supplied. Reversibility of the hardware makes it usable for either $\frac{3}{4}$ " doors or $1\frac{1}{8}$ " doors. Top and side mount adjustable hardware are available for single, biparting and by-passing installations. All double wheel carriers are constructed so that adjustments are made without the necessity of disturbing the screws set into the door. Side mount carrier aprons have only a $1\frac{1}{2}$ " drop from top of door to bottom of apron. Grant Pulley & Hardware Corp., Flushing 54, N.Y.



hh. Six feet of storage area stows equipment into deep sliding shelves, shallow sliding trays, revolving shelves, adjustable shelves. One unit is made for cleaning tools and supplies, has hooks and shelves to hang and store items. Company has other units—among them a mid-counter unit with drop shelf (24" w., 81" or 87" h., 12 $\frac{1}{4}$ " or 24 $\frac{3}{4}$ " d.) and storage above and below. You can get as many different combinations as you need including low flat drawers for trays and linens (unit is 33" w., 36" h., 24 $\frac{3}{4}$ " d.) St. Charles Kitchens, St. Charles Mfg. Co., St. Charles, Ill.

continued on p. 228



"ROW HOUSES?"

*NO SUCH THING WITH A COMBINATION
OF **CECO** WINDOWS*

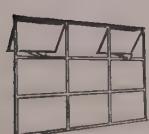
Home after home with duplicated architectural design—but each has individual "personality." That's a promise when each is equipped with a combination of different types of Ceco Windows. Ceco offers you more variety in steel and aluminum windows than any other manufacturer. We keep a mighty close check on what "window-wise" home-buyers want. Ceco is ready to help you choose the right windows for different homes, whether they're in a low-cost housing development—or whether they're custom-built jobs. For better steel and aluminum windows, for better home building, better call your Ceco man today! You'll be money ahead if you do.

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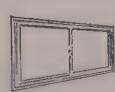
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General Offices: 5601 West 26th Street, Chicago 50, Illinois



Window-Walls



Casements



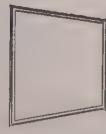
Sliding Windows



Basement Windows



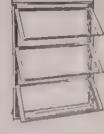
Double-Hung Windows



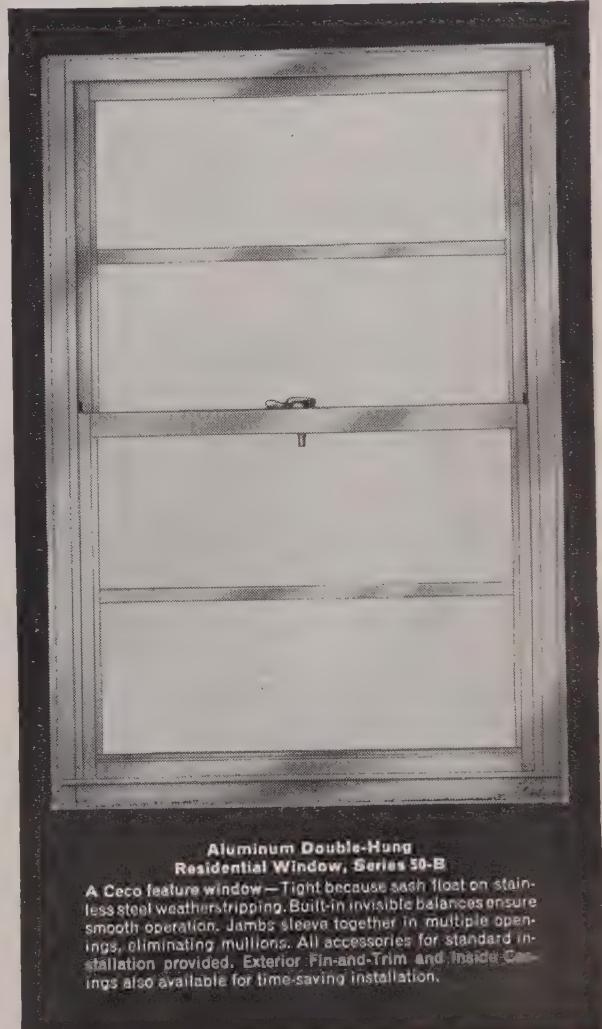
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Please send FREE booklet, "Aids for Better Homes and Other Wood Construction," showing details on how and where to use Teco Trip-L-Grip Framing Anchors for stronger wood framing.

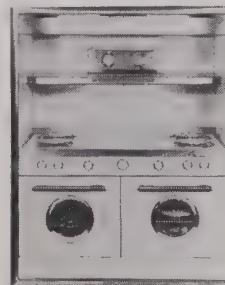
NAME _____

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STREET _____

CITY, ZONE, STATE _____

ii. **GE refrigerator center** is a free-standing unit with a built-in look. A new "K" frame steel support eliminates the need of a supporting wall, puts refrigerator, freezer and storage into one unit which can be used like a room divider, recessed in an alcove (without attaching it to a wall), or placed against an existing wall. Components that stack on the "K" frame include a wall refrigerator 64" w., 39½" h., 17½" d.; a roll-out freezer (its top serves as counter work surface) is 30½" w., 24¾" d., 34¾" h. and cabinets which separate the two appliances and store small items. The "K" frame will sell for under \$50. General Electric, Major Appliance Div., Louisville, Ky.



jj. **Kook-Center** is a new built-in combination kitchen—all in one area. The package includes a Western-Holly range with barbecue-broil oven, four large simmer burners, two burners with automatic heat control, a vanishing grill, full width utility shelf, a built-in fluorescent light and ventilating fan. Unit is recessed with room for storage above and around it. Two sizes: 36" unit has finished chrome frame 40" w., 59" h.; 42" unit takes a frame 46" w., 59" h. Western-Holly Appliance Co., Culver City, Calif.

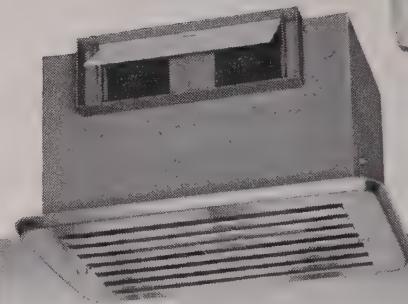


kk. **Sliding door unit** for wardrobes comes ready for installation in the rough opening with its two by-passing doors hung, like the company's Ready-Hung doors. In this unit however, header jamb needs four screws and a floor guide needs to be fastened to the finish floor. These 1¾" sliding doors come complete with hardware. Four sizes are available in Masonite, Philippine mahogany, Shina, ash or stain grade birch. From \$27.55 depending on size and wood specified. Ready Hung Door Mfg. Co., Burbank, Calif.

continued on p. 232

**For Appearance
For Performance
For Profit**

**figure with a
NEW *Broan*
Range Hood***
and a



**NEW *Broan*
Twin Blower Kitchen Fan**

Of all the modern appliances built into the kitchen, none is more vital in its effects on cleanliness, comfort and gracious living than the air exhaust system. If you agree, then you have a sharp and professional interest in the outstanding Broan Range Hood and its companion accessory, the Broan Twin Blower Kitchen Fan that can be installed in the hood, or independently in a ceiling, cabinet or soffit. Together, or by themselves, these two units provide a positive vapor exhaust system for any and all types of kitchen layouts—the kind that really works to win and hold customer good will for you.

Write today for full details—including a series of typical types of air exhaust systems to fit all kitchen plans.

*This Broan hood comes in five sizes to meet any installation requirement. There are three preferred finishes—white enamel, coppertone, and stainless steel . . . as well as push-button controls, concealed flood lighting and matching splash plates.

***Broan* MFG. CO., INC.**
Hartford, Wisconsin, near Milwaukee

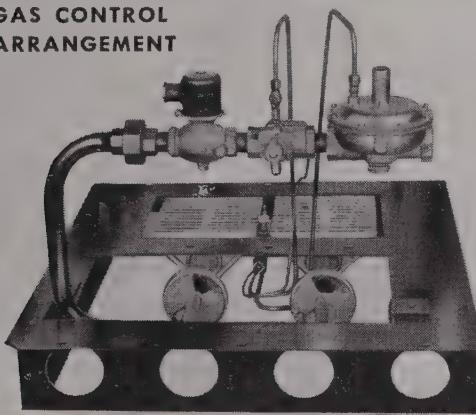
these standard furnishings: Circulator, expansion tank, gas regulator, gas automatic pilot and safety valve, gas flue diverter (draft hood), control relay, gas control valve (solenoid), tube brush, temperature, pressure and altitude gauge, drain valve, manual air vent and complete internal wiring and piping ready for system hookup.

Patented features

C-E's patented aluminized steel burners are designed for use with all domestic gas fuels. The gas control arrangement, consisting of gas pressure regulator, automatic safety cut-off and solenoid is in place and is readily accessible for easy servicing.

The boiler heating surface consists of 92 feet of 1" steel tubing. Tubing is bent by C-E's exclusive process and welded in accordance with ASME code.

GAS CONTROL ARRANGEMENT



Small radius bends and compact tube arrangement make for maximum transfer of heat to water. Small water volume of the C-E boiler (approximately 3 gallons) provides efficient utilization of fuel and practically instantaneous response to heating demands.

Add air conditioning

Homeowners desiring the comfort of air conditioning can add a chiller unit to the system at a later date. The boiler is specifically designed for this addition. If C-E room convectors are used and piping properly insulated with original heating installation, the summer air conditioning can be accomplished by simple interconnections between boiler and chiller units.

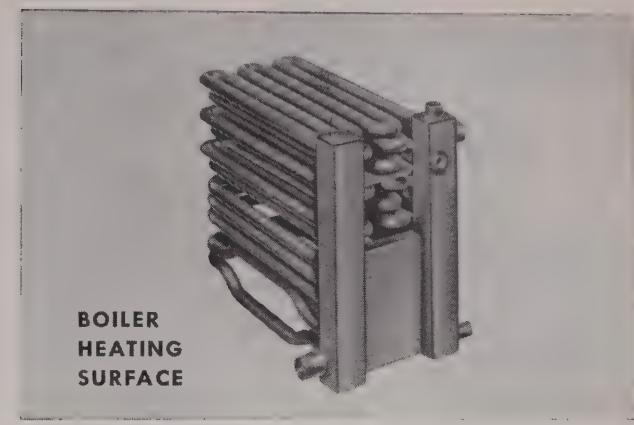
Take advantage of the many benefits C-E Heatmaster Home Heating and Air Conditioning offers by sending for more information now.



HEATMASTER

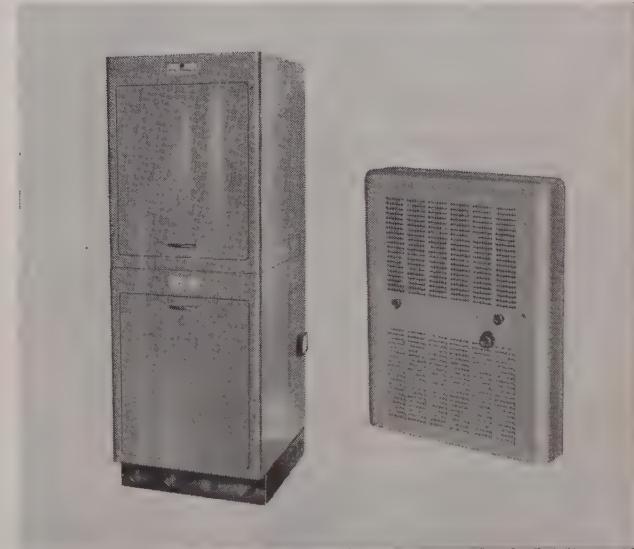
The easiest way to winterize a home

COMBUSTION ENGINEERING INC., Home Equipment Division, 911 West Main Street, Chattanooga 1, Tennessee



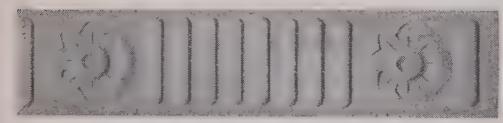
About C-E

The C-E domestic home heating unit is built by Combustion Engineering, one of the world's largest manufacturers of steam generating equipment, with 70 years experience and "know how." Combustion Engineering is currently designing a steam generator for the Philadelphia Electric Company power station which will be the most efficient station in the world. This C-E steam generating equipment is being designed for 6000 psi to produce steam at 1200°F. This will be the highest pressure and temperature ever projected for utility stations. This is an example of the kind of work that typifies the company behind the C-E home heating unit.



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More and More... Bendix Mouldings Help Make the Sale!



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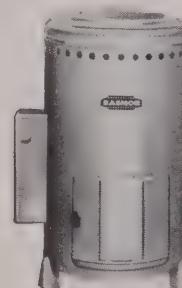
City Zone State



II. With Proctor wall jack, two workmen can lift 2,000 lb. walls to perpendicular with little effort. Jack has a safety stop attachment that keeps the upright wall firmly in place for nailing, moving or bracing. Company says that heavy plasterboard walls can be raised without danger of pulling nails or marring construction. The jack is easily portable—it weighs about 30 lbs.—and is made of lightweight tubular steel. A pair cost \$149 F.O.B. Proctor Products Co., Seattle 55.



mm. LOF home insulation is made of light density, fine glass fibers with aluminum reflective vapor barrier on one side. Tabs extend beyond the edges of the insulation for nailing or stapling to framing members. Insulation is made in three thicknesses: standard (1½" thick) costs about 6¢-8¢ psf.; medium (about 2" thick) is 7¢-9¢ psf.; full thick (about 3½" thick) costs from 10¢-12¢ psf. Insulation is made in widths to fit between framing members, studs and joists, spaced 16" o.c. It is packaged 4 rolls to a bag for easy handling and application, and is light—from 1-2 oz. per running foot. L-O-F Glass Fibers Co., Toledo 1, Ohio.



nn. Basmor gas-fired incinerator disposes of wet or dry combustibles. A dual purpose pilot takes care of small charges deposited during the day and no timer setting or main burner operation is necessary. Unit can take charges up to 2 bushels and when larger charges are deposited and full power of main burner is needed, an automatic timing control is set. The timer automatically shuts off main burner when waste is disposed of (about 48 hours later). Maximum hourly input rating is 12,000 BTU. About \$135. Manufactured by Bastian-Morley Co., Inc., La Porte, Ind.

continued on p. 238

America's Pioneer...

Tub enclosures

- ★ Custom or stock
- ★ 7/32" - 1/4" glass
- ★ Drop-in header bar locks panel in place
- ★ Wall jambs self-adjust to out-of-plumb wall conditions up to 9/16"



Here is America's finest quality competitively priced. Whether it's a stock model to fit recessed tubs or a custom job for neo-angle tubs GLASHCO makes it better.

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WITH NEW LAP SIDING DURAPLY



3. **Back-up wedge** is installed to give the deep, shadow-line effect. Back-up wedges are included in each Duraply carton. Duraply lap siding sizes are 11 $\frac{1}{8}$ " x 96" and 15 $\frac{1}{8}$ " x 96". Furring strips come pre-attached to bottom edge.



4. **Duraply is caulked** at each seam to give a tight weatherproof seal. Duraply itself is completely weatherproof — has undergone rigid "torture tests" to prove that it's unaffected by wetting, boiling, steaming or freezing — will stand up to most adverse weather.

New overlaid plywood cuts painting costs too; also available in large panels.

If you think Duraply is remarkable because of the way it saves material and labor costs, wait till the time to paint comes! For Duraply slashes painting time and costs, too. Its supersmooth surface takes paint better . . . and even ends the need for a primer coat. And two coats of paint on Duraply offer the same protective cover as three coats on ordinary plywood. Furthermore, tests indicate that oil paint will not blister on Duraply no matter how severe the weather conditions.

Because Duraply lap siding comes in 12- and 16-inch widths you can cover a wall faster than with conventional siding, and with less waste. This is still another saving in labor and material.

Besides lap siding, Duraply is also available in 4' x 8' and 4' x 10' panels with special overlay on one or both sides. In many localities, building codes permit use of these large panels of $\frac{3}{8}$ " thickness directly over studs; saving labor and material costs of installing sheathing.

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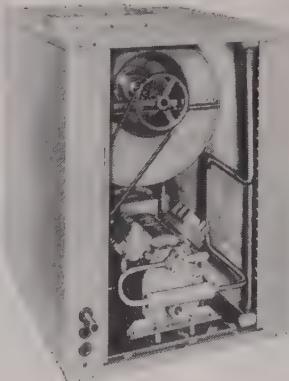
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COMPANY

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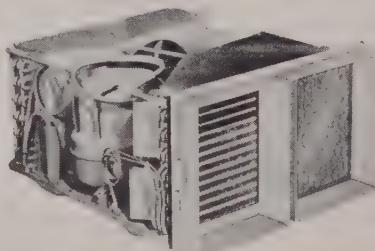
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oo. Westinghouse air-cooled air conditioner like some other air-cooled units previously introduced is especially designed for areas where water may be in short supply. Heart of the new unit, condenser-compressor cabinet, is shown above. A 3-ton model costs about \$900 plus installation, the 2-ton model is \$600. Because a larger horsepower compressor is usually needed in all air-cooled units to deliver same cooling capacity as water-cooled models, Westinghouse uses a 4 hp compressor in the 3-ton waterless unit to deliver three tons of cooling. Condenser cabinet is 37 $\frac{1}{8}$ h., 36" w., 29" d. in 3-ton model. One of this unit's features is a vertical air discharge which is claimed to avoid local air currents and air noise problems that might occur with horizontal discharge units installed close to adjoining buildings. Westinghouse Electric Corp., Pittsburgh 30, Pa.



pp. New air-cooled air conditioner, Mitchell's "QR-200", is a low cost, self-contained packaged unit for residential use—completely assembled, prewired and sound-conditioned. Two hp model will retail for \$445 plus installation, comes with flanges attached for connection to duct work. Chassis holds evaporator, condenser, compressor, fans and fan motor, measures 16 $\frac{1}{4}$ " x 31 $\frac{1}{2}$ " x 16 $\frac{1}{4}$ ". Unit is primarily a window conditioner, but it can also be installed through-the-wall or in an attic, crawl space or basement. It needs 17" headroom. Cooling capacity is 20,000 BTU/hr. based on an outside temperature of 95°. If total heat load of spaces to be cooled is in excess of 20,000 BTU/hr. dampers might be installed to cool a kitchen and living room during day, sleeping areas at night. Additional features are: copper tubing coils with aluminum fins and oversized evaporator and condenser coils which maker claims results in maximum cooling efficiency. Unit operates on 230 volt, single phase alternating current with a power factor of 90% and is UL approved. Mitchell Mfg. Co., Div. of Cory Corp., Chicago 14, Ill.

continued on p. 244

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SAVE TIME ...
SAVE WORK ...
SAVE MONEY!**

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INTERIOR DOORS
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support combustion!**

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Now . . . you can specify Rez
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We finished a contemporary home 13 different ways to show how easily you can create *custom effects* for clients using the 13 Rez fashion Color Tones.

Wood becomes a *new material*—usable as never before! For Rez gives *any wood any color effect* desired, plus lasting protection against warping, swelling, cracking—all without masking the natural grain beauty.

In fact, the Rez family of fine finishes answers every wood finish-

ing problem, interior or exterior. We suggest you investigate the unusual benefits of Rez—more and more being specified to accent the beauty in wood.

For details on the Rez Prescription Wood Finishing Service write Monsanto, St. Louis, Mo., Rez, Dept. 418.



Inside, too, Rez brings new beauty in depth to wall paneling, cabinetry. Brushes on easily, dries to a custom finish.

Rez is made by MONSANTO where creative chemistry works wonders for you

Laux Rez: Reg. U. S. Pat. Off.



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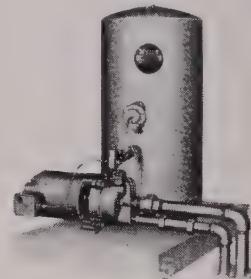
Edwin L. Wiegand Company, world's largest manufacturer of electric heat for home and industry, offers you a complete line of electric home heating equipment. Your Chromalox Distributor can help you with the ideas, applications and service. See him today. Get the full story and ask to see the complete, packaged promotion material available to help you exploit Chromalox Electric home heating in your market.

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7770 Thomas Boulevard, Pittsburgh 8, Pa.



qq. Federal packaged boiler-burner is a new gas fired unit that arrives completely prepiped, prewired and preassembled. VGF-A has a burner of the single port, inshot type and features a newly designed flame spreader guaranteed to give uniform flame distribution. For domestic hot water supply, 240 gal. per hour tankless coils are provided as standard equipment. Boiler is equipped with controls and hot water heating specialties. Four sizes range in price from \$447.50 to \$542.50. Federal Boiler Co., Inc., Midland Park, N. J.



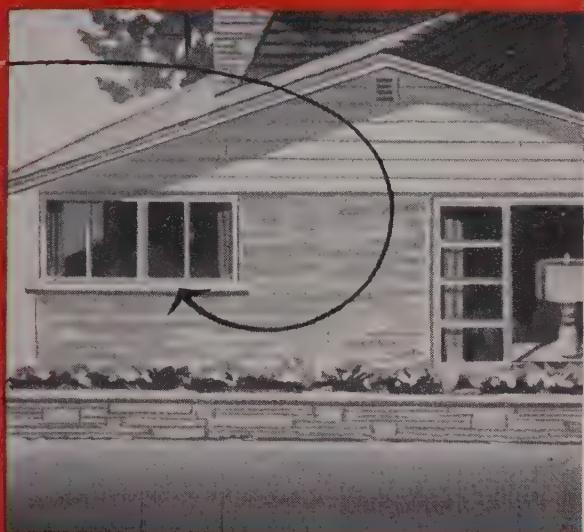
rr. HK Ejecto jet-type pump is a complete water system for shallow or deep well units. In shallow well pump, high performance characteristics are said to be reached by means of a reverse ejector procedure. New pump is available as a water system with a 4, 11, 21 or 42-gal. pressure tank. New materials and new design give higher corrosion- and wear-resistance, faster priming and lighter weight, maker says. Pump and motor assembly without tank, cost about \$79. Pump in $\frac{1}{3}$ and $\frac{1}{2}$ hp used as a complete water system will cost about \$91.50. F. E. Myers & Bro. Co., Ashland, Ohio.



ss. Prepackaged boiler-burner for forced hot water is delivered complete—factory wired, piped and tested, ready for installation. Company says about all you need to do is hook-up. Small, compact size, lightweight controls eliminate planning and layout on the job. Unit fits through 28" openings, weighs 390 lbs. crated with all controls. In operation, extended flat steel surfaces supply consistent concentrated heat conduction through heat transfer fingers, permitting steady flow of BTU into boiler water to give faster heating. Price is about \$400. Portmar Boiler Co., Brooklyn 15, N. Y.

Technical Publications p. 252

SALES APPEAL WITH



Slide-Tite Horizontal prime windows are beautifully styled in satin smooth aluminum.



Winter Seal Jalousies are outstanding for life-long ruggedness, smart design and smooth operation.

Homes with *sales appeal* move fast. Those without this "precious ingredient" just sit—waiting for a buyer.

Winter Seal aluminum sliding windows and jalousies give homes the extra appeal that closes the deal. They are made of heavy-duty extruded aluminum, satin-finished to look better and last longer. Winter Seal products are designed for maximum efficiency of operation to provide perfect weather control. The brand name *Winter Seal* is your guarantee of top quality and exclusive features at a fair price. Winter Seal products are sold and serviced nationally by a large network of reliable dealers.



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WINTER SEAL CORPORATION

14575 Meyers Road
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Please send me your FREE brochures on sliding windows and jalousies.

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Business

Street and Number

City State

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STARLITE

It's the new brighter-than-bright finish for stainless steel sink bowls exclusive with ELKAY. And what's more, it carries a new, lower than ever price. Here, too, is another arresting ELKAY consumer ad working for you.

*Centerpiece
Of Beauty*

adds glamour to your kitchen



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STAINLESS STEEL SINKS

All eyes turn immediately to the lustrous beauty of your ELKAY Lustertone Sink... you are deemed a hostess of charm as well as a practical homemaker. The bright cleanliness of this stainless steel sink tells all that your home is up-to-date and spans... lets you enjoy the luxury of living without tiresome scrubbing and bleaching. You can have all the benefits of a Lustertone sink for no more than the cost of an ordinary sink. And, because it's guaranteed for life, you have lifetime lustrousness that softly reflects any change in kitchen color combinations. Write for literature and prices today!

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1874 SOUTH 54TH AVENUE, CHICAGO 30, ILLINOIS

The World's Oldest and Largest Manufacturer of Stainless Steel Sinks... Since 1920

525. Bolta-Wall. Bolta Products, Dept. HH, Lawrence, Mass. 4 pp. Bolta-Wall vinyl wall covering, its application, how to create special effects.

526. Plastics in the home building industry. Bakelite Co., Dept. HH, 300 Madison Ave., New York City. 16 pp.

How many ways can you use plastics? This book shows dozens of ideas with sketches of materials in use. Sections on foundations, framing, finishing, built-in equipment, mechanical equipment cover a multitude of plastics uses and ideas.

527. The ABC's of Modern Plastics. Bakelite. 48 pp.

In this book plastics information begins with historical data, ranges on to present day application techniques. Exploration of plastics' Big Four—phenolic, vinyl, polystyrene and polyethylene—delves into their qualities, uses, origins and resins.

528. Alsynite fiberglass panels. Alsynite Co. of America, Dept. HH, 4654 DeSoto St., San Diego 9, Calif. 4 pp.

Close in a shower, roof over a patio, partition a room, put up a breezeway or carport with these handsome building panels in 23 new colors.

529. Polyglas Reinforced Plastics for Industry. Modular Plastic Corp., Dept. HH, 1635 Westminster, Detroit 11, Mich. 4 pp. Brochure includes drawings and photos of exhaust hoods, special duct assemblies of sections and tanks that the company custom-builds to your specifications for any application.

530. The House of Today. B. F. Goodrich Chemical Co., Dept. HH, 3135 Euclid Ave., Cleveland 15, Ohio. 8 pp. Here's the brochure about the Geon House shown at the Plastics Exposition in New York in June. Centerfold section diagrams the many uses of plastics found in the house, elaborates them with diagrams, descriptions.

531. Idea File. Lynch Asbestos Co., Dept. HH, 2939 S. Sunol Drive, Los Angeles 23. 3 sheets.

Suggested ways to use Lascolite panels to delineate a patio, divide a room, create a carport, stretch out garage space, etc.

532. Olin Polyethylene. Olin Film Div., Olin Mathieson Chemical Corp., Dept. HH, 655 Madison Ave., New York 21. The versatile plastic film you use as a vapor barrier—as a protective sheet for materials and construction, as a moisture barrier and thermal insulator in sidewalls, as a blanket to facilitate curing concrete.

533. Weldwood Kalistrone. U.S. Plywood Corp., Flexible Materials Div., Dept. HH, 2921 S. Floyd St., Louisville 13, Ky. 4 pp.

This handsome vinyl wall material is tough wearing, resistant to scuffing and scratching, doesn't chip or peel. The big folder presents 29 swatches in the company's color line, plus a collection of weaves and patterns.

534. Zonolite Insulating Plastic. Zonolite Co., Dept. HH, 135 S. LaSalle St., Chicago, Ill. 4 pp.

Booklet outlines uses for lightweight, fire-continued on p. 258



"It's Mrs. Jones. . . . Loose tile in her bathroom again! Maybe we saved a few pennies a gallon on that last batch of adhesive, but repair calls left us in the hole on almost every job where we used it. No more of that cheap stuff for me!"

"There's another wall tile job sold for us by a satisfied customer. I can't remember a single repair job we've had to do since we started using Roltite Wall Tile Adhesive. That's why so many happy customers are telling their friends about us."



QUALITY COSTS LESS IN THE LONG RUN

Roltite Wall Tile Adhesive offers everything you've been looking for in an adhesive for installing plastic and metal wall tile. Superior adhesion to almost any clean, dry surface. Remains permanently plastic . . . never dries hard or cracks. Non-staining. Low shrinkage. Exceptional resistance to heat and moisture. And you can count on absolute uniformity—batch to batch and can to can.

This adhesive meets or surpasses all the requirements of the Industries Commercial Standards (CS-168-50). And we didn't take our own lab's word for it. Its conformance to standards has been confirmed by one of the country's largest independent testing laboratories . . . extract of lab report sent on request.

Don't gamble pennies against dollars on cheap adhesives which can cause you all sorts of grief. Standardize on Roltite Wall Tile Adhesive and be sure of top quality. For the complete story, see your Roltite distributor or mail the coupon below.



**Midcontinent Adhesive Company
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Please send me specification sheet, instruction folder and other information on Roltite Wall Tile Adhesive.

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Company _____

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**MIDCONTINENT
Adhesive COMPANY**

ADHESIVES SINCE 1928

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The only sure way to "eliminate" the ravages of destructive moisture is with the installation of "Premoulded Membrane" during the original construction . . . all other methods are merely temporary "stop-gaps." When specifying or installing a vapor seal, be sure it meets these Sealight standards of quality: permeance rating of only 0066 grains per square foot . . . resistant to rot, mold and termites . . . expandable . . . quickly, easily and permanently installed . . . ONLY "Premoulded Membrane" meets them all.

Eliminates

- EXCESSIVE WINDOW CONDENSATION
- EXCESSIVE BASEMENT DAMPNESS—RUSTING OF TOOLS
- BLISTERING OF EXTERIOR PAINT
- DETERIORATION OF INSULATION VALUES
- DETERIORATION BY MILDEW OF RUGS, FURNISHINGS, SHOES AND CLOTHING

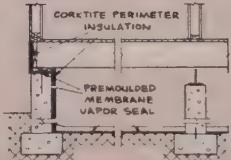
IDEAL FOR ALL TYPES OF CONSTRUCTION

SLAB-ON-GRADE



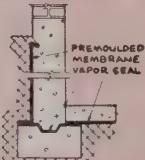
This illustration shows how the installation of Premoulded Membrane and Corkite completely isolates the slab and superstructure from soil moisture.

CRAWL SPACE



The proper installation of Premoulded Membrane and Corkite removes all danger of condensation and oxidation of metal installations in the crawl space area . . . eliminates the need for ventilation.

BASEMENT



The proper installation of Premoulded Membrane to the exterior of the basement walls as well as beneath the floor slab insures a permanently warm and dry basement.

ARCHITECTS, BUILDERS, DEALERS . . .

WRITE TODAY for complete information that tells you where, why and how to use Sealight Premoulded Membrane, the only true vapor seal and Corkite, the resilient, impermeable perimeter insulation.

"Guardian of the Home"



W. R. MEADOWS, INC.

10 KIMBALL ST.

ELGIN, ILLINOIS



proof insulating plastic, describes its advantages.

535. Hasko-Struct Structural Insulation. Haskelite Mfg. Corp., Dept. HH, Grand Rapids 2, Mich. 4 pp.

Hasko-Struct panels are engineered, structurally designed, laminated sandwich panels for many applications in the building industry. They are said to be moisture and vermin proof, rot resistant, non-warping and non-corrosive.

536. Corrlux Translucent Structural Panels. L-O-F Glass Fibers Co., Dept. HH, P.O. Box 20026, Houston 25, Texas. 4 pp. Design unlimited is possible when you put ideas to work. These corrugated plastic panels can be used in skylights, ceilings, partitions, patios, doors, canopies and awnings, storm shutters, showers, etc.

537. Modular Reinforced Fiberglas Panels. Modular Plastic Co., Dept. HH, 1635 Westminster St., Detroit 26, Mich. 1 sheet. These panels are reinforced with an inner web of metal. Almost any design in the form of the metal web can be molded into the panel to new sizes, new patterns, new textures, new colors. Panels are weatherproof and fadeproof, can be made fire resistant.

538. Wascoseal Flashing. Wasco Products, Inc., Dept. HH, Bay State Road, Cambridge 38, Mass. 1 sheet.

A new plastic barrier gives buildings permanent, low-cost protection. Company says material is ideal for concealed flashing purposes—at spandrel beams, window heads and sills, under copings, at foundation cut-offs and other through-the-wall conditions.

539. Plastimode Interlocking Strips. Plastic Process Co., Dept. HH, 662 N. Robertson Blvd., Los Angeles 46, Calif. 1 sheet.

The strips come in bright colors for enclosing cabinets with a minimum of space requirements. In the kitchen you might install roll-a-way interlocking doors, or use them to section off a storage space.

540. Plexiglas. AIA File 31-F. Rohm & Haas Co., Dept. HH, Washington Square, Philadelphia 5, Pa. 8 pp.

Architectural lighting in a variety of sizes and shapes. Plexiglas is used as a white translucent formed panel or flat sheet which transmits diffused light to give maximum light transmission. Applications in the book show squares, rectangles, circles, ovals of light. Modular designs include surface-mounted panels, semi-recessed, domes, multiple pyramids, etc.

541. Marvinol Vinyls. Naugatuck Chemical, Div. of US Rubber Co., Dept. HH, Naugatuck, Conn. 12 pp.

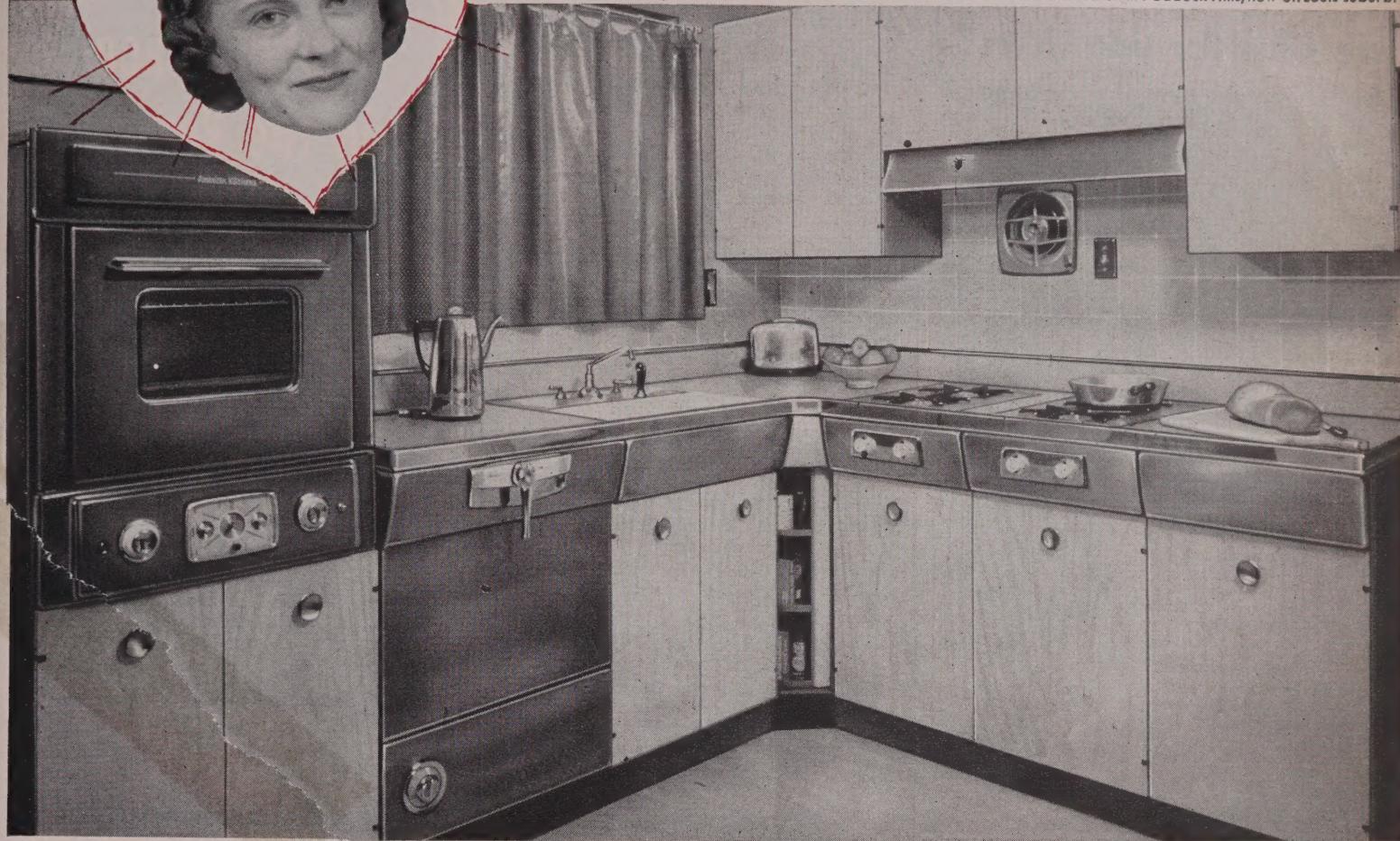
Marvibond process bonds Marvinol vinyl film and sheeting to metal. Most structural forms and shapes can be obtained after vinyl and metal have been bonded. Book shows some examples, lists advantages, test data.

542. Color-Craft Plastic Panels. Color-Craft Products, Inc., Dept. HH, 5035 Bellevue Ave., Detroit 11, Mich. Folder. These striated plastic panels are made of

continued on p. 264

*It's love at first sight
all over America*

Mrs. A. Oliver Ward, proud owner of a new home with a beautiful American Kitchen in Paddock Hills, new St. Louis suburb.



SHE SEES THE *American Kitchen* SO... THEY BUY THE HOUSE!

Mrs. A. Oliver Ward, Paddock Hills, St. Louis, is another example of home buyers everywhere who fall in love with the "house-selling" American Kitchen.

"When we walked into the kitchen of the Paddock Hills house," Mrs. Ward reports she said, "Oh, Ollie, this is it. This kitchen has everything I've ever wanted."

Like Mrs. Ward, new home buyers across the nation choose the house with American Kitchens "Pioneer"—the stunning new combination of natural birch and antique copper on steel frame. They go for American

Kitchens wonderful work-savers . . . the Roto-Tray Dishwasher, Built-In Ovens and Set-In Ranges.

Mayer, Raisher, Mayer, well known developers of Paddock Hills northwest of St. Louis, say "American Kitchens are a vital factor in selling our houses."

If you haven't already discovered the "house-selling" power of the "Pioneer" wood, copper and steel kitchen and other American Kitchens products, mail the coupon below. Let us show you how American Kitchens will sell your homes faster.

American Kitchens

DIVISION  CONNSERSVILLE, INDIANA

SELL MORE HOMES FASTER

American Kitchens Division
Connersville, Indiana

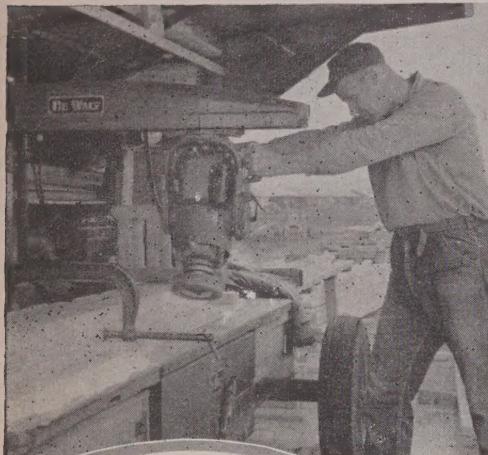
I'd like to have "no obligation" quotation on my next kitchens.
Please send your new Architects' and Builders' file.

NAME _____

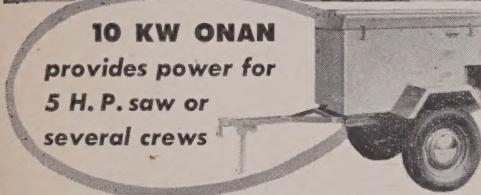
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What sizes of ONAN Portable Electric Plants are best for your jobs?

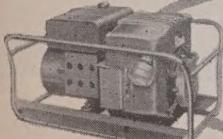


10 KW ONAN
provides power for
5 H. P. saw or
several crews



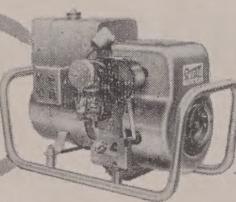
Powered by two-cylinder, air-cooled gasoline engine. Available housed and with trailer as shown. Similar model in 7½ KW capacity.

5 KW ONAN
for crews on
3 or 4 homes



Two-cylinder, air-cooled, gasoline engine. 4 plug-in receptacles. With carrying frame, on dolly, or with plain base. Also in 3,500 watts A.C.

2 or 2½ KW
ONAN powers
electric tools
for 2 crews



One-cylinder, gasoline engine. 4 plug-in receptacles. With carrying frame, dolly-mounted or plain base. 2,500-watt unit weighs only 139 pounds.

1 or 1½ KW
supplies power
for single
crew



Compact, lightweight. One-cylinder, gasoline engine. With carrying frame, rubber-tired dolly or plain base. Also 500 and 750-watt models.

Onan portable electric plants combine 4-cycle quick-starting and long life with compactness and lightweight. Completely Onan-built, with Onan short-stroke engines and Onan generators. Other models to 50,000 watts.

Write for portable plant folder or see your Onan distributor.

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for further details check numbered coupon, p. 270

styrene. Booklet gives colors, shows application as wall surfacing, describes properties.

543. Dow Plastics. The Dow Chemical Co., Plastics Dept., Dept. HH, Midland, Mich. 20 pp.

This informative book names the Dow plastics, tells about their applications and about the Dow technical service that helps designers to find the right plastic for every application. Properties of the plastics are charted, photos of applications show uses.

544. Luminous Ceilings. General Plastics Corp., Dept. HH, Marion, Ind. 4 pp. Vista-Glo ceilings are basically a system of diffusing panels mounted end to end with an acoustical tile border. Properties of the ceiling, panel sizes and installation data are given.

545. Kelsunite Translucent Building Panels. Wallace Mfg. Co., Dept. HH, 10th & Fayette, North Kansas City, Mo. 4 pp.

Booklet describes the advantages of Kelsunite, has an idea file which shows you how many applications are possible for a variety of structures. Technical data is included.

546. Polyplastex. Kerber Co., Dept. HH, 151 Spring St., New York 12. Folder. These decorative plastic sheets come in a variety of designs to be used as screens and enclosures almost anywhere in the house. Fabrication data is given, as is a guide to selection of gauges.

547. Vixtex Fabrics. Vixtex Sales Corp., Dept. HH, 49 E. 53rd St., New York 22. 12 pp.

For "Walls of Fame," the company has a galaxy of handsome tri-dimensional patterns. Applications are shown, plus close-ups of some of the patterns and specifications for use.

548. Jaylis Folding Decorator Screens. Universe Products Co., Dept. HH, 2923 West Olympic Blvd., Los Angeles 6, Calif. 4 pp.

New weather resistant plastic screens cover window areas, take the place of doors and divide rooms. Diagrams, descriptions.

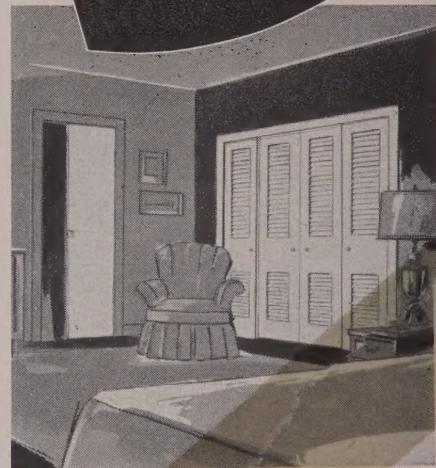
549. Insul-Pipe Research, Development and Application Report. The Coleman Co., Wichita, Kansas.

A series of findings based on a research program begun as a cooperative effort between The Coleman Co. and the Gustin-Bacon Mfg. Co., 210 W. 10th St., Kansas City, Mo. to develop a prefabricated, pre-insulated pipe to improve and standardize the performance of attic air ducts. Report describes technical performance of glass fibers which make up Insul-Pipe, the vinyl film used for insulation. Problems, development, performance and application are all explained and illustrated. Photos included.

550. Neoprene Notebook No. 69. E. I. du Pont de Nemours & Co., Elastomers Div., Dept. HH, Wilmington 98, Del. This issue contains a story on sliding windows with neoprene frames cut and mitred

continued on p. 270

**More
Usable Space
in the Very
Same Place!**



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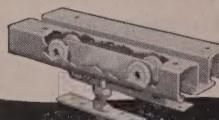
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Take the guesswork out of Sliding Door Installations
Select the right hardware for every interior use from Kennatrack's easy-to-use Buyer's Guide. Write for your free copy.



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For Genuine Beauty . . . specify
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There's more vinyl
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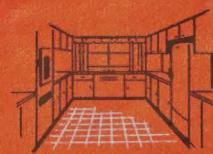
Here is the rich, authentic beauty of old-world terrazzo—in wonderful, modern, "soft-to-the-step" Bolta-Floor vinyl tile! Bolta-Floor is a high-content, homogeneous vinyl floor tile that assures longest wear and lowest possible maintenance costs. Bolta-Floor will keep its gleaming beauty through years of hard use!

"Terrazzo" Bolta-Floor is produced in 15 beautiful decorator colors—and in 6 x 6, 9 x 9, 12 x 12 and 18 x 18 tile sizes (.08" or .080" gauge).

Don't settle for less! Get the *genuine* beauty of new Bolta-Floor "Terrazzo."



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CONSTRUCTION

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HOSE INTO
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OR CORD
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FEATURE Vacu-Flo FOR TOP ATTENTION AND EXTRA SALES POWER

Newest practical attraction for your model home promotions. Profit with the major publicity and advertising in leading national publications. Be first in your area to feature Vacu-Flo. We'll help you. Here's real appeal:

- ★ Dustless cleaning
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- ★ Maximum vacuum efficiency at all times
- ★ Eliminates machine to lift, lug or tug around
- ★ Safe—no electrical cord to tangle or trip over
- ★ Built to serve the life of your home

H-P PRODUCTS, INC., LOUISVILLE, OHIO

DEPT. H

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City _____ Zone _____ State _____

to fit any size and shape. Easily installed, windows are said to last the life of the house and don't require maintenance. Industrial floor mats of lightweight sponge neoprene are described in another report about comfort and safety underfoot.

551. Airline Home Heating and Conditioning Equipment. Ingersoll Conditioned Air Div., Borg-Warner Corp., Dept. HH, 760 E. Vine St., Kalamazoo, Mich. 30 pp. A redesigned line of heating, cooling equipment in a complete catalogue file.

New line features coal, oil and gas furnaces in a wide variety of capacities and styles. Air-cooled and water-cooled air conditioners are new. There are also conversion burners, incinerators, gas and electric hot-water heaters.

552. Corbin Locksets. P. & F. Corbin Div., American Hardware Corp., Dept. HH, New Britain, Conn. 4 pp. Cylindrical lock sets in wrought brass, bronze or aluminum with design details, sketches, descriptions, specifications.

PRODUCTS AND PUBLICATIONS COUPON

For more information on new products and publications in this September issue check key numbers below and mail to:

House & Home

9 Rockefeller Plaza, New York 20, N.Y.

NEW PRODUCTS

- a. General Cable Co. line wire
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- h. United Cork laminated sandwich panels
- i. Warren-Magnuson shower head
- j. Elastic Stop-Nuts
- k. Amico vinyl tile
- l. General Tire & Rubber Co. vinyl tile
- m. Lam-O-Wall covering
- n. Robbins metaltone tiles
- o. Bolta wall tile
- p. Studio Brick vinyl sheet
- q. Alsynite "Steplap"
- r. Commodore Industries Rend-O-Lite
- s. Goodrich window sash
- t. Universe Products plastic screen
- u. Luminous ceilings
- v. Woodall plastic laminate
- w. Olin Mathieson polyethylene film
- x. Bruce Vapo-Chek
- y. Sisalkraft Moistop
- z. Progress Unlimited Plasti-grip
- aa. Foamflex Doorstrip
- bb. Miracle Adhesives "Protektsinsul"
- cc. Concrete Vitreicon finish
- dd. Styrox masonry coating
- ee. Nat'l. Gypsum Acoustimetal
- ff. Carey Fire-Chex '400
- gg. Grant Pulley & Hardware Rocket 6000
- hh. St. Charles storage wall
- ii. GE "K" frame center
- jj. Western-Holly Kook-Center
- kk. Ready Hung sliding door unit
- ll. Proctor wall jack
- mm. L-O-F home insulation
- nn. Basmor gas-fired incinerator
- oo. Westinghouse air conditioner
- pp. Mitchell air conditioner
- qq. Federal packaged boiler
- rr. Myers Ejecto pump
- ss. Portmar prepackaged boiler-burner

TECHNICAL PUBLICATIONS

- 525. Bolta-Wall
- 526. Bakelite plastics
- 527. Bakelite ABC's of plastics
- 528. Alsynite fiberglass panels
- 529. Modular Plastics
- 530. Goodrich House of Today
- 531. Lynch idea file
- 532. Olin polyethylene
- 533. Weldwood Kallstrom
- 534. Zonolite insulating plastic
- 535. Haskelite insulation
- 536. L-O-F Corrulux panels
- 537. Modular Fiberglas panels
- 538. Wascoseal flashing
- 539. Plastimode interlocking strips
- 540. Rohm & Haas plexiglas
- 541. Marvinol vinyls
- 542. Colorcraft plastic panels
- 543. Dox plastics
- 544. General Plastics Vista-Glo ceilings
- 545. Kelsunite panels
- 546. Kerber polyplastex
- 547. Vortex fabrics
- 548. Jayliss screens
- 549. Insul-pipe
- 550. Neoprene notebook
- 551. Ingersoll heating equipment
- 552. Corbin locksets

* For information about unlisted Technical Publications see below.

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